

# Vital Statistics Illinois 1991

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### Explanation of Symbols

Quantity zero in frequency tables	--
Rates or percent more than 0 but less than 0.05	0.0
Figures within parentheses not included in totals	( )
Rate zero corresponding to -- on frequency table	-0-
Rate or ratio does not meet standards of reliability or precision	*
Category is not applicable or data are not available	. . .

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## VITAL STATISTICS - ILLINOIS - 1991

## INTRODUCTION

This report is in four parts: a summary, generally limited to statewide and large-scale regional tabulations, and a narrative; tabulations for each county and health service area; tabulations for cities of 25,000 population or more; and technical appendices.

Downstate, as used in this report, refers to all areas of Illinois outside the corporate limits of the city of Chicago, unless otherwise stated.

Data in this report are based on birth, death, fetal death, marriage, and divorce certificates, which by law must be filed with the Illinois Department of Public Health. The birth, death, and fetal death tables include data received from other states and Canada on Illinois residents who were born or died in their jurisdictions, and exclude data on nonresidents of Illinois who were born or died in this state. The marriage and divorce tables include all and only those events that occurred in Illinois. Appendix 1 includes samples of the certificates and a description of the vital statistics system.

Vital rates cited in this report for years prior to 1990 are based on revised intercensal population estimates obtained from the U.S. Bureau of the Census and may differ from those published in previous editions of "Vital Statistics, Illinois."

Starting with 1989 data, the tabulation of births and fetal deaths by race has changed. In prior years, birth and fetal death tabulations were by race of child, based on information reported for the mother and father. In cases where only one parent was white, the child was assigned to the other parent's race. When neither parent was white, the child was assigned the race of the father. Beginning with the 1989 data year, births and fetal deaths were tabulated by race of mother, as reported on the certificate. Changing the basis for tabulation to race of mother results in more births and fetal deaths classified as white and fewer classified as black or of other races.

In Part II, there are two pages for each county, health service area (HSA), and the state. The numbers of events are provided for white and black race groups as well as for persons of Hispanic origin (persons of Hispanic origin may be of any race). On the first page, detailed natality information is presented along with infant mortality data. On the second page, detailed mortality data are given by age at death and by cause. Rates are calculated for the total population as well as for the population ages 0 to 64 years and 65 years and older. In addition, the years of potential life lost (YPLL) is presented as an indicator of premature death.



## NUPTIALITY

### MARRIAGE

The total number of marriages registered in Illinois was 94,771 in 1991. This number represents a 5.8 percent decrease from the number of marriages registered in 1990 (100,632). While the number of marriages in 1991 decreased from the previous year, the 1991 total was still well above the number in 1988 (78,302).

The historical fluctuations in the number of marriages reflect primarily the changes in the marriage rate (the number of marriages per 1,000 population) rather than changes in the population size. The marriage rate declined from 8.8 in 1990 to 8.2 in 1991 (Figure 1). This was the result of nearly 6,000 fewer marriages in 1991. Similarly, the lower marriage rate in 1991, compared with 1980 (9.6), is primarily the result of fewer marriages in 1991 rather than differences between the sizes of 1980 and 1991 populations.

Recent rather sharp fluctuations in the marriage rate appear to be largely the result of the human immunodeficiency virus (HIV) testing requirement for obtaining a marriage license initiated in Illinois in 1988. The marriage rate in 1988 dropped sharply, coinciding with the HIV testing requirement, and rebounded in 1989 and 1990 following the repeal of the testing requirement (Table R). The 1991 marriage rate, while lower than that in 1990, appears to be more in line with the longer-term trend established prior to 1988.

To a large extent, the smaller number of marriages in 1991 than in 1980 can be attributed to the fact that the proportion of the population 20 to 29 years of age, who have the highest marriage rate, shrank from 1980 to 1991 as the baby boom generation aged. Such a demographic change not only lowered the marriage rate, it also raised the median age of marriage from 25 years in 1980 to 28 years in 1991 for grooms, and from 23 to 26 years for brides.

As in previous years, young adults 20 to 29 years of age accounted for a majority of the number and percentage of marriages in 1991. More than 53 percent of the grooms and 56 percent of the brides were in this age group (Table S), while the male (or female) population 20 to 29 years of age accounted for a much smaller proportion of the total male (or female) population. The population 30 years of age and over accounted for an increasingly larger proportion of the marriages. In 1991, almost 43 percent of the grooms were in this age group, compared to 31 percent in 1980. Similarly, the proportion of the brides 30 years of age and over increased from 23 percent in 1980 to nearly 35 percent in 1991.

In addition to varying by age, marriage rates also varied by race. Whites were more likely to marry than nonwhites. The marriage rate for whites (the number of marriages with white bride and white groom per 1,000 white population) was 8.3 in 1991, compared with 6.2 for nonwhites. Marriage also varied by location of occurrence. Among the counties within the Chicago metropolitan area, Will had the lowest marriage rate (6.6) while Kane and Lake had the highest (both 9.3). The

marriage rate for Cook County was 7.7 in 1991, higher than the rate for Du Page (7.1) but lower than that for McHenry (8.0). Downstate Illinois had a higher marriage rate (9.1) than the Chicago metropolitan area counties, except Lake and Kane.

More than 32 percent of the brides and grooms in 1991 had been married before (Table T). Both grooms and brides who had been married more than once before accounted for approximately 7 percent of the total marriages. Only 1.4 percent of the grooms and 1.6 percent of brides had been married more than twice.

In 1991, among both grooms (30,004) and brides (30,171) who had been married before, more than 91 percent of them had been divorced (Table U). The widowed, those whose previous marriages had been annulled, and those whose previous marriage status was unknown accounted for the remaining 9 percent of the marriages.

FIGURE 1. -- MARRIAGE AND DIVORCE RATES: ILLINOIS, 1965-1991

## DIVORCE AND ANNULMENT

The number of divorces and annulments in 1991 totaled 45,813 (45,659 divorces and 154 annulments), essentially the same number as in the years from 1986 (45,852) to 1990 (45,977). It represents, however, a substantially smaller number of divorces and annulments (hereafter collectively referred to as "divorces") than were recorded each year between 1973 and 1986. On average, for example, the number of divorces in the early 1980s was 5,000 more than the number in 1991.

An explanation for the smaller number of divorces in 1991, as well as in the immediately preceding years, lies in the lower divorce rate rather than the smaller size of the adult population. The divorce rate per 1,000 population reached a peak of 4.6 in 1976 and 1979. The rate has since gradually declined to the current rate of 4.0, stable since 1988 (Figure 1).

Census and divorce data suggest that a portion of the decline in the divorce rate from 1980 to 1991 may be attributed to the change in age composition of the state population. That is, decline in the divorce rate during the 1980s was at least partially due to a decreasing proportion of young adults (who had the highest divorce rate) and an increasing proportion of older adults (who had a lower rate).

While the male population 20 to 34 years of age accounted for about one-third of the male population 15 years of age and over, almost one-half (47.8%) of the divorced husbands were in this age group (Table V). This proportionate imbalance, indicating a higher divorce rate among young adult males, was even more pronounced for females. While 30 percent of the female population 15 years of age and over were in the age group 20 to 34 years, almost 56 percent of the divorced wives were in this same age group.

The divorce rate for whites (the number of divorced white husband-white wife couples per 1,000 white population) was somewhat higher than the rate for nonwhites (the number of divorced nonwhite husband-nonwhite wife couples per 1,000 nonwhite population). The divorce rate for whites was 3.2 in 1991, compared to 2.8 for nonwhites. More than 10 percent (4,612) of the total number of divorces involved couples where one or both persons' racial backgrounds were unreported.

Most divorces occur relatively early in marriage. (For just annulments, in 1991, almost one-half occurred before the end of the first year of marriage.) As in 1990, the number of divorces in 1991 was highest for couples who had been married three years and generally declined with increasing duration of marriage. More than 35 percent of divorcing couples had been married less than five years and almost 63 percent had been married less than 10 years (Table W).

In 1991, the number of children younger than 18 years of age involved in divorce was 42,712. Not only was this number lower than the 43,151 children involved in divorce in 1990, but the proportion of children affected by a divorce decreased also. The rate of children involved in divorce per 1,000 children under 18 years of age was 14.3 in 1991 compared to 14.5 in 1990, 14.2 in 1989 and 14.0 in 1988. Among the 44,343 divorces where the presence of children was stated, approximately 55

percent of divorcing couples in 1991 had children under age 18 years: 25 percent had one child, while 20 percent had two children, and 9 percent had three or more children. For 3 percent of divorcing couples, the number of children involved was unstated.

Tables R through W present data on marriage and divorce.

## NATALITY

### LIVE BIRTHS

There were 194,066 registered live births to Illinois residents in 1991. That number was lower than the number of registered live births to Illinois residents in 1990 (195,499), but still was the second highest total since 1971. The number of live births registered in 1991 represented the first decline in such numbers since 1986. Likewise, the crude birth rate (number of live births per 1,000 population) of 16.8 declined by 1.8 percent and was the first decline in the crude birth rate since 1986 (Figure 2).

FIGURE 2. -- BIRTH AND DEATH RATES: ILLINOIS, 1965-1991

The general fertility rate (number of live births per 1,000 women 15-44 years of age) also declined from 1990 to 1991. The 1991 rate of 71.9 per 1,000 women of childbearing age was 1.4 percent below the 1990 rate of 72.9 and, as with other birth indicators, was the first such decline since 1986.



Rates for both the white population (67.2) and nonwhite population (91.2) were below their 1990 values (68.3 and 91.3, respectively).

The decrease in the overall general fertility rate is reflected in corresponding decreases in several age-specific birth rates, especially within the major childbearing period of 20 to 34 years of age. Birth rates for women 15 to 19 years of age and women 35 to 39 years of age were the only two age-specific birth rates to have increased from 1990 to 1991 (Text Table 1).

For women 35 to 39 years of age, the proportion of births that are first children was higher than in 1980. In 1980, 9.3 percent of all births to women in the age group 35 to 39 year were first children. By 1990, that percentage had increased to 13.6. In 1991, 13.5 percent of all births to women 35 to 39 years of age were first children. For mothers under 25 years of age, the percentage of all births that were first children decreased over the same period, indicating that for those mothers giving birth at younger ages, more births are of higher order.

Text Table 1 also shows that the fertility rates varied considerably by age group. The fertility rate peaked with the age group 25 to 29 years and then dropped with increasing age. The variability in the fertility rates by age, coupled with the differences in the numbers of women in childbearing age groups, determined the distribution of births by age of mother as shown in Text Table 1.

The level of educational attainment, an item tabulated directly from the birth certificates, is generally inversely related to the fertility rate. However, more than 41 percent of the live births in Illinois occurred to women with at least some college education (Text Table 2), virtually the same as the comparable proportion for 1990. As in the previous three years, about 78 percent of the live births occurred to women with at least a high school education. The educational attainment of mothers varies with race. For example, the proportion of white mothers with at least a high school education in 1991 was about 81 percent, compared to 67 percent for black mothers. This difference mainly reflects the proportion of mothers with at least a four-year college education (23.4% for white mothers and 6.1% for black mothers).

The number of infants born in multiple deliveries (e.g., twins, triplets) in 1991 was 5,056, nearly 100 more than in 1990. Multiple deliveries accounted for more than 2.6 percent of the total live births, slightly higher than the comparable proportion in 1990. The proportion of multiple births has grown fairly steadily, having risen from 2 percent in 1980.

TEXT TABLE 1. -- RESIDENT LIVE BIRTHS AND BIRTH RATES BY AGE OF MOTHER  
 FOR TOTAL AND FOR FIRST BIRTHS: ILLINOIS, 1980, 1990, 1991  
 (Rates per 1,000 women in specified age group)

Year and birth order	Total	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44	45-49 years
<u>Number</u>									
All births	<sup>(1)</sup>								
1991	194,066	656	24,635	47,124	58,163	44,779	16,290	2,306	64
1990	195,499	632	24,913	47,443	60,268	44,267	15,538	2,315	78
1980	189,941	609	29,174	62,404	58,463	29,956	7,955	1,310	66
First child									
1991	61,470	605	15,576	17,199	17,139	8,467	2,202	259	8
1990	62,073	595	15,803	17,366	17,647	8,290	2,108	241	7
1980	66,786	579	19,931	24,770	16,004	4,676	739	79	7
First parity <sup>(2)</sup>									
1991	76,650	624	17,808	21,507	21,651	11,398	3,207	431	8 <sup>(3)</sup>
1990	77,399	613	18,084	21,719	22,334	11,148	3,089	378	13 <sup>(4)</sup>
<u>Rates</u>									
All births	<sup>(5)</sup>								
1991	71.9	1.6	64.6	111.2	121.8	86.9	34.6	5.4	0.2
1990	72.9	1.6	62.8	111.4	122.3	87.3	34.0	5.7	0.2
1980	71.3	1.4	55.8	115.6	117.6	67.8	22.2	4.3	0.2
First child									
1991	22.8	1.5	40.9	40.6	35.9	16.4	4.7	0.6	0.0
1990	23.1	1.5	39.8	40.8	35.8	16.3	4.6	0.6	0.0
1980	25.1	1.3	38.1	45.9	32.2	10.6	2.1	0.3	0.0
First parity <sup>(2)</sup>									
1991	28.4	1.6	46.7	50.7	45.4	22.1	6.8	1.0	0.0
1990	28.9	1.6	45.6	51.0	45.3	22.0	6.8	0.9	0.0

(1) Includes figures for age of mother not stated.

(2) First parity is defined as first live birth.

(3) Includes one birth to mother 53 years of age.

(4) Includes one birth to mother 50 years of age.

(5) Total rates are computed by relating total births, to women 15 to 44 years of age, regardless of age of mother.

TEXT TABLE 2. -- NUMBER AND PERCENT DISTRIBUTION OF RESIDENT LIVE BIRTHS BY EDUCATIONAL ATTAINMENT AND RACE OF MOTHER: ILLINOIS, 1991

	Total	Years of school completed by mother					
		0-8 years	9-11 years	12 years	13-15 years	16 years or more	Not stated
		Number of births					
All races	194,066	10,851	31,944	69,403	41,607	39,151	1,110
White	145,576	9,683	18,370	51,320	31,616	33,980	607
Nonwhite	48,490	1,168	13,574	18,083	9,991	5,171	503
Black <sup>(1)</sup>	43,077	956	13,262	16,889	8,963	2,584	423
		Percent distribution <sup>(2)</sup>					
All races	100.0	5.6	16.6	36.0	21.6	20.3	
White	100.0	6.7	12.7	35.4	21.8	23.4	
Nonwhite	100.0	2.4	28.3	37.7	20.8	10.8	
Black <sup>(1)</sup>	100.0	2.2	31.1	39.6	21.0	6.1	

<sup>(1)</sup>Included in "nonwhite"

<sup>(2)</sup>Excludes births with unknown educational attainment of mother

## BIRTHS TO UNMARRIED WOMEN

The number of births to unmarried women in Illinois continued to rise, but more slowly than in past years. Births to unmarried women totaled 63,172 in 1991, an increase of less than 2 percent over the number in 1990 (62,052), but an increase of nearly 48 percent over the corresponding number in 1980 (42,749). Births to unmarried women in 1991 accounted for about 33 percent of all births, nearly the same proportion as that recorded in 1990 (32%).

For each age group, the proportion of all births that are to unmarried women changed little from 1990. In 1991, 80 percent of all mothers over 15 to 19 years of age were unmarried, a figure unchanged from 1990, and still higher than the 57 percent in 1980 (Text Table 3). The proportion of nonmarital births increased among women 20 to 24 and 25 to 29 years of age. The proportion of nonmarital births decreased after 20 to 24 years of age. The proportions were the smallest for mothers 30 to 34 and 35 to 39 years of age (both 13%).

The number of births to unmarried women was disproportionately larger among blacks compared to whites. The number of births to unmarried black women (33,724) accounted for more than 53 percent of the total nonmarital births in 1991, while black births comprised only 22 percent of all Illinois births (Table C). Approximately 78 percent of the births to black women were nonmarital births, compared to 20 percent among white women (Figure 3). The difference in the proportion of

nonmarital births between these two races varied with age of mother, but remained substantial across all age groups.

FIGURE 3: -- ILLINOIS RESIDENT BIRTHS TO UNMARRIED WOMEN BY  
RACE: 1950-1991

Nonmarital births also varied with residence. The number of nonmarital births in the city of Chicago (33,076), for example, accounted for more than 52 percent of the total nonmarital births in 1991, despite the fact that only 24 percent of the state's population resided in Chicago. More than half (55%) of the total births in Chicago were nonmarital births compared to 23 percent Downstate.

TEXT TABLE 3. -- PROPORTION OF NONMARITAL BIRTHS BY AGE OF MOTHER:  
ILLINOIS, 1980, 1990 AND 1991

Age of mother (years)	Proportion of nonmarital births		
	1980	1990	1991
15-19 .....	.57	.80	.80
20-24 .....	.25	.45	.47
25-29 .....	.11	.19	.21
30-34 .....	.08	.13	.13
35-39 .....	.09	.13	.13
40 and over .....	.15	.16	.15

### PRENATAL CARE

The proportion of mothers who began prenatal care during the first trimester of pregnancy has remained rather steady since 1983 at approximately 78 percent. This proportion was 77.5 percent in 1991, slightly lower than the 1990 value. Similarly, the proportion of mothers initiating care in the third trimester or receiving no care at all has remained at approximately 5 percent since 1985.

There was a difference by race in the timely receipt of prenatal care. In 1991, the proportions of white mothers and black mothers who began care in the first trimester were 82 percent and 63 percent, respectively. Almost 4 percent of white mothers and 10 percent of black mothers received third trimester care or no care.

Initiation of early prenatal care also varied with age of mother (Text Table 4). In 1991, only 43 percent of mothers under 15 years of age and 56 percent of those 15 to 19 years of age began care in the first trimester compared with 87 percent of those in their 30s. The age disparity in early receipt of prenatal care has widened over the last several years. After dropping during the 1980s, the proportion of mothers 15 to 19 years of age receiving early prenatal care rose slightly between 1990 and 1991 and is now at the 1980 level. The proportion of mothers 20 to 24 years of age receiving early prenatal care has consistently declined since 1980. In contrast, the proportion of mothers 30 years of age and over receiving first trimester care in 1991 was greater than in 1980, although the proportion of mothers 30 to 34 years of age receiving first trimester care declined from 1990 to 1991.

TEXT TABLE 4. -- PRENATAL CARE INITIATED IN THE FIRST TRIMESTER OF PREGNANCY, AS PERCENT OF RESIDENT LIVE BIRTHS BY AGE OF MOTHER: ILLINOIS, 1980, 1985, 1990 AND 1991

Age of mother (years)	Percent initiated in first trimester <sup>(1)</sup>			
	1991	1990	1985	1980
All ages .....	77.5	77.8	77.9	75.4
Under 15 .....	42.9	39.8	38.5	36.9
15-19 .....	56.2	55.6	54.6	56.2
20-24 .....	69.4	70.0	72.9	74.0
25-29 .....	83.4	83.8	84.6	83.0
30-34 .....	87.1	87.6	86.9	82.9
35-39 .....	86.5	86.3	84.7	77.2
40 and over .....	81.5	82.0	75.6	65.3

<sup>(1)</sup> Excludes births with unknown trimester of pregnancy when prenatal care began

## INFANT HEALTH

The proportion of infants who were born in hospitals was about the same in 1991 as in the previous eight years, 99.3 percent. At birth, babies weighing less than 2,500 grams (low birthweight) totaled 15,142 in 1991, or 7.8 percent of all live births. This was an increase from the 7.6 percent in 1990.

The incidence of low birthweight varied with race. Among black infants, the incidence of low birthweight was 14.9 percent in 1991, up from 14.5 percent in 1990; for white infants, it was 5.7 percent in 1991 compared to 5.6 percent in 1990.

The risk of low birthweight varied with the mother's age (Text Table 5 and Figure 4). The risk was highest (10.8%) for infants born to mothers under 18 years of age, decreasing to the lowest level (6.7%) for infants born to mothers 25 to 29 years of age, and then rising to a higher level (8.9%) for those born to mothers 40 years of age and over. This age-specific U-shaped curve pertaining to the probability of low birthweight was evident among infants born to white women, but less so among infants born to black women where, except for the age groups 18 to 19 and over 40 years, the percentage of low birthweight increased with age of mother.

The risk of low birthweight also varied with marital status (Text Table 5). As in 1990, the 1991 incidence of low birthweight was more than twice as high for infants born to unmarried mothers (12.4 percent) as for infants born to married mothers (5.6 percent). This difference was more than double for mothers 20 years of age and over.

When black mothers and white mothers were examined separately, the differences in the incidence of low birthweight between infants born to unmarried mothers and those born to married mothers were less. Nevertheless, the effect of marital status on the incidence of low birthweight was evident. For both whites and blacks, the difference in the risk of low birthweight was more than 50 percent higher for infants born to unmarried mothers 25 years of age and over than for those born to married mothers.

FIGURE 4. -- PERCENT OF ILLINOIS RESIDENT LIVE BIRTHS WITH LOW BIRTHWEIGHT BY AGE OF MOTHER, ILLINOIS: 1991

Infants born to mothers from Chicago tended to have a higher prevalence of low birthweight than did infants born to Downstate mothers. Nearly 11 percent of all infants born to Chicago mothers in 1991 experienced low birthweight, compared with 6 percent among Downstate infants (Table B). There were slight differences by race between Chicago and Downstate. Infants born to Chicago black mothers had low birthweights 16 percent of the time versus 13 percent to Downstate black mothers. For whites, it was 6 percent for both Chicago and Downstate.

Another indicator of the health condition of infants is the Apgar score. The Apgar score is a composite evaluation that, on a scale from 0 to 10, measures the newborn's physical condition based on heart rate, respiratory effort, muscle tone, reflex response and color at one minute and five minutes after birth. A score of 10 is optimum. In 1991, high Apgar scores of 9 or 10 were reported for 48 percent of all babies at one minute after birth and 91 percent at five minutes after birth. Low scores of 0 to 6 (indicating severe to moderate asphyxia) were assigned to 7.3 percent of babies at one minute and to 1.4 percent at five minutes in 1991.

TEXT TABLE 5. -- PERCENT OF RESIDENT LIVE BIRTHS OF LOW BIRTHWEIGHT BY MARITAL STATUS, RACE, AND AGE OF MOTHER: ILLINOIS, 1991

Age of mother (years)	Total			Married			Unmarried		
	All races <sup>(1)</sup>	White	Black	All races <sup>(1)</sup>	White	Black	All races <sup>(1)</sup>	White	Black
All ages . . . . .	7.8	5.7	15.0	5.6	5.1	11.4	12.4	8.4	15.9
Under 20 . . .	10.1	7.8	12.7	7.2	6.7	12.9	10.7	8.4	12.7
Under 18 . .	(10.8)	(8.1)	(13.1)	(7.4)	(7.0)	(*)	(11.2)	(8.4)	(13.1)
18-19 . . . . .	(9.6)	(7.7)	(12.4)	(7.2)	(6.7)	(12.6)	(10.4)	(8.3)	(12.4)
20 - 24 . . . . .	8.2	5.9	13.9	5.5	5.0	10.9	11.2	7.8	14.4
25 - 29 . . . . .	6.7	4.9	15.5	5.0	4.5	10.3	13.3	7.9	18.0
30 - 34 . . . . .	7.2	5.4	18.8	5.6	5.0	12.1	17.8	10.1	23.9
35 and over .	8.5	6.7	19.3	6.9	6.3	13.5	18.6	11.8	24.9
35-39 . . . . .	(8.4)	(6.7)	(19.3)	(6.9)	(6.3)	(13.6)	(18.6)	(11.4)	(24.8)
40 and over	(8.9)	(6.8)	(19.2)	(8.6)	(6.0)	(12.9)	(19.0)	(14.0)	(26.1)

\*Ratio does not meet standards of reliability or precision; numerator less than 10 or denominator less than 100.

<sup>(1)</sup>Includes races other than white and black



The Apgar score varied with race, mother's age and residence. In 1991, for example, higher proportions of black infants than white infants had low five-minute Apgar scores. About 2.5 percent of black babies had a five-minute Apgar score of less than 7 compared with 1.1 percent of white infants.

### BIRTHS TO HISPANIC MOTHERS

The number of births to Hispanic mothers totaled 25,718 in 1991, an increase of more than 6.1 percent over the number in 1990 (24,245). On the other hand, the number of births to non-Hispanic mothers decreased by 1.7 percent, from 171,254 in 1990 to 168,348 in 1991. As a result, the proportion of total live births in Illinois to Hispanic mothers increased from 12.4 percent in 1990 to 13.3 percent in 1991.

Of all Hispanic births in 1991, 74.9 percent were to Mexican mothers and 12.5 percent to Puerto Rican mothers. The percentages for 1990 were 72.8 and 14.1, respectively. In both 1990 and 1991, virtually all Hispanic births, regardless of whether they were to Mexican or Puerto Rican mothers, were reported as white births (Text Table 6).

TEXT TABLE 6. -- NUMBER AND PERCENT DISTRIBUTION OF LIVE BIRTHS BY RACE OF MOTHER, ACCORDING TO HISPANIC ORIGIN OF MOTHER: ILLINOIS, 1991

All origins		Hispanic				Non-Hispanic
		Total	Mexican	Puerto Rican	Other and unknown	
Number of births						
All races	194,066	25,718	19,260	3,208	3,250	168,348
White	145,576	25,292	19,080	3,111	3,083	120,284
Black	43,077	320	143	91	86	42,757
Other	5,413	106	19	6	81	5,307
Percent distribution						
All races	100.0	100.0	100.0	100.0	100.0	100.0
White	75.0	98.3	99.2	97.0	94.9	71.4
Black	22.2	1.2	0.7	2.8	2.6	25.4
Other	2.8	0.4	0.1	0.2	2.5	3.2

Hispanic mothers continue to be highly concentrated within a few counties. Almost 90 percent of all Hispanic births in 1991 occurred to residents of three counties (Cook, Kane and Lake). Cook County alone accounted for 79 percent of all Hispanic births in the state, including 90 percent of all Puerto Rican births (Text Table 7).

Hispanic women differed from non-Hispanic women not only in reproductivity, but also in the likelihood of being a teenage mother (Text Table 8). The proportion of teenage mothers among

Hispanic mothers was greater (16%) than that among white non-Hispanic mothers (8%), but smaller than that among black non-Hispanic mothers (27%). Although the corresponding proportion among Puerto Rican mothers (22%) was higher than that among Mexican mothers (16%), it was still lower than that among black non-Hispanic mothers.

TEXT TABLE 7. -- LIVE BIRTHS BY SELECTED COUNTIES OF RESIDENCE AND HISPANIC ORIGIN OF MOTHER AND BY RACE OF NON-HISPANIC MOTHERS: ILLINOIS, 1991

County	All origins	Hispanic				Non-Hispanic			
		Total	Mexican	Puerto Rican	Other and unknown	Total	White	Black	Other
Illinois . . . .	194,066	25,718	19,260	3,208	3,250	168,348	120,284	42,757	5,307
Cook . . . . .	96,387	20,205	14,780	2,890	2,535	76,182	39,059	33,632	3,491
Du Page . . . .	13,768	968	767	62	139	12,800	11,704	336	760
Kane . . . . .	6,271	1,538	1,374	102	62	4,733	4,126	491	116
Lake . . . . .	9,413	1,196	907	90	199	8,217	7,115	858	244
McHenry . . . .	3,246	185	161	4	20	3,061	3,032	7	22
Rock Island . .	2,145	181	172	2	7	1,964	1,698	256	10
Will . . . . .	6,030	450	398	14	38	5,580	4,719	789	72
Winnebago . . .	4,188	159	133	8	18	4,029	3,314	644	71
Remainder . . .	52,618	836	568	36	232	51,782	45,517	5,744	521

TEXT TABLE 8. -- LIVE BIRTHS BY AGE AND HISPANIC ORIGIN OF MOTHER AND BY RACE OF NON-HISPANIC MOTHERS: ILLINOIS, 1991

Age of mother (years)	All origins	Hispanic				Non-Hispanic			
		Total	Mexican	Puerto Rican	Other and unknown	Total	White	Black	Other
All ages . . . .	194,066	25,718	19,260	3,208	3,250	168,348	120,284	42,757	5,307
Under 15 . . . .	656	77	58	11	8	579	103	476	--
15-19 . . . . .	24,635	4,155	3,040	689	426	20,480	9,372	10,931	177
15-17 . . . . .	(9,022)	(1,481)	(1,087)	(253)	(141)	(7,541)	(2,818)	(4,671)	(52)
18-19 . . . . .	(15,613)	(2,674)	(1,953)	(436)	(285)	(12,939)	(6,554)	(6,260)	(125)
20-24 . . . . .	47,124	8,464	6,444	1,154	866	38,660	24,311	13,580	769
25-29 . . . . .	58,163	6,950	5,252	738	960	51,213	39,921	9,421	1,871
30-34 . . . . .	44,779	4,156	3,032	451	673	40,623	33,110	5,862	1,651
35-39 . . . . .	16,290	1,627	1,213	140	274	14,663	11,811	2,139	713
40-44 . . . . .	2,306	264	206	23	35	2,042	1,610	313	119
45 and over . .	64	9	6	--	3	55	35	14	6
Unstated . . . .	49	16	9	2	5	33	11	21	1

Text Table 8 also indicates that Hispanic mothers have a higher proportion of births among the peak childbearing years compared to births among non-Hispanic mothers. Hispanic mothers 20 to 29 years of age accounted for 60 percent of all Hispanic births, while births to non-Hispanic white mothers in this age group accounted for 53 percent and births to non-Hispanic black mothers in the same age group accounted for 54 percent of all births . On the other hand, non-Hispanic white mothers had the largest proportion of births to mothers 30 years of age and over (39%), followed by Hispanic women (24%). The proportion of births to mothers 30 years of age and over was smallest among non-Hispanic black mothers (19%).

Hispanic mothers also differed from non-Hispanic mothers with respect to marital status (Text Table 9). The percentage of childbearing by unmarried mothers increased both among Hispanic and non-Hispanic women between 1990 and 1991. There is a difference, however, between the Hispanic and non-Hispanic populations in the proportions of unmarried mothers. In 1991, 36 percent of Hispanic births (9,228) were to unmarried mothers compared with 32 percent of non-Hispanic births (53,944). However, the proportion of infants born to unmarried women was higher among Hispanic women, especially Puerto Rican women, than that among non-Hispanic white women. The proportion of infants born to unmarried non-Hispanic black women was the highest of any race or ethnicity at more than 78 percent.

In 1991, Hispanic women, both Mexican and Puerto Rican, tended toward a larger number of births than non-Hispanic white women. For example, 22 percent of Hispanic births were to women who already had at least three natural children, compared with 17 percent of non-Hispanic white births (Text Table 9).

As in 1990, Hispanic mothers in 1991 were much less likely than non-Hispanic mothers to have completed high school. In 1991, 42 percent of all Hispanic women giving birth were high school graduates, compared with 89 percent of non-Hispanic white and 66 percent of non-Hispanic black mothers (Text Table 11). Mexican mothers were the least likely to have completed high school. Only 36 percent of Mexican mothers had completed 12 or more years of school and 38 percent had very limited schooling (eight years or less). Hispanic mothers also were less likely to receive prenatal care beginning in the first trimester of pregnancy and more likely to receive delayed care or none at all than non-Hispanic white mothers. In 1991, the proportion of Hispanic mothers who received prenatal care beginning in the first trimester was 63.2 percent, approximately the same as the level for non-Hispanic black mothers (62.8%), but below the level for non-Hispanic white mothers (84.8%). The proportion of Mexican mothers in 1991 who received care beginning in the third trimester or no care at all was 10.0 percent, an increase from 9.8 percent in 1990.

Infants born to Hispanic mothers in 1991 had lower percentages of low birthweight and of one- and five-minute Apgar scores of less than 7 compared to infants born to non-Hispanic mothers. Among babies born to Hispanic mothers, only those born to Puerto Ricans had a higher incidence of low birthweight (8.7%) than those born to non-Hispanic mothers (8.1%). The incidence of low birthweight was highest among infants born to non-Hispanic black mothers (15.0%). Low

birthweight incidence among infants born to Mexican and other Hispanic mothers (5.5% and 6.3%, respectively) was similar to that for non-Hispanic white babies (5.7%). The proportions of babies with five-minute Apgar scores of less than 7 (indicating severe to moderate asphyxia) were virtually the same for those born to mothers among the various Hispanic groups (1.0%) compared to those born to non-Hispanic white mothers (1.1%). One-minute Apgar scores of less than 7 occurred slightly less frequently among infants born to Hispanic mothers (5.8%) than among infants born to non-Hispanic white mothers (6.9%).

TEXT TABLE 9. -- PERCENT OF BIRTHS WITH SELECTED CHARACTERISTICS BY HISPANIC ORIGIN OF MOTHER AND BY RACE OF NON-HISPANIC MOTHERS: ILLINOIS, 1991

Characteristic	All origins	Hispanic				Non-Hispanic			
		Total	Mexican	Puerto Rican	Other and unknown	Total	White	Black	Other
1st births . . . . .	31.7	33.6	34.1	32.1	32.3	31.4	32.8	26.6	37.5
4th and higher order births . . . . .	19.8	21.6	21.9	20.9	20.2	19.5	16.8	28.1	11.4
Births to unmarried women . . . . .	32.6	35.9	32.6	56.4	35.1	32.0	16.6	78.4	7.5
Years of school completed by mother									
0-8 years . . . . .	5.6	31.9	38.0	8.5	18.7	1.6	1.3	2.0	3.8
12 or more . . . . .	77.4	41.7	36.4	56.1	58.9	82.8	88.5	66.2	89.2
Prenatal care beginning in									
1st trimester . . . . .	76.9	63.2	61.5	68.4	68.5	78.9	84.8	62.8	76.1
3rd trimester or no care . . . . .	5.3	9.2	10.0	7.0	7.0	4.6	2.8	9.7	5.1
Births of low birthweight . . . . .	7.8	6.0	5.5	8.7	6.3	8.1	5.7	15.0	7.0
1-minute Apgar score less than 7 . . . .	7.3	5.8	5.6	6.1	6.7	7.6	6.9	9.7	5.6
5-minute Apgar score less than 7 . . . .	1.4	1.0	1.0	1.0	0.9	1.4	1.1	2.4	1.1



## MORTALITY

### GENERAL MORTALITY

In 1991, there were 103,871 Illinois resident deaths of which 4,436 occurred outside of Illinois. There were 99,435 deaths recorded in Illinois of which 2,029 occurred to persons who were not residents of the state. The total number of resident deaths in 1991 was more than the number in 1990 (102,697) and 1989 (103,027), but less than in 1988 (105,038) (Table A). The crude death rate (number of deaths per 1,000 population) has declined slowly and steadily since 1920. However, since 1975, the crude death rate has fluctuated between 9.2 and 8.8 (Figure 2). The 1991 crude death rate was 9.0, the same as in 1990 and 1989. Nevertheless, one should not conclude that Illinois residents had roughly the same probability of dying in 1991 as, for example, in 1980. Quite to the contrary, the age-specific death rates for each age group were lower in 1991 than the rates in 1980 (except for persons 25 to 44 years of age; Text Table 10).

TEXT TABLE 10. -- AGE-SPECIFIC DEATH RATES: ILLINOIS, 1980, 1990 AND 1991  
(Rates per 100,000 population in specified age group)

Age (years)	1980	1990	1991
All ages . . . . .	895	898	900
Under 1 . . . . .	1,515	1,140	1,078
1-4 . . . . .	64	46	55
5-14 . . . . .	31	21	25
15-24 . . . . .	109	98	106
25-44 . . . . .	171	175	179
45-64 . . . . .	960	837	812
65 and over . . . . .	5,471	5,175	5,183

Despite the declines in many of the age-specific death rates, the crude (all ages) death rate remained virtually unchanged (Figure 2). The reason is that, although the force of mortality has decreased, this has been offset by the general aging of the population. In other words, larger proportions of the population are in the older age groups, which have higher death rates, and this is the main reason for the lack of decline in the total number of deaths during the 1980s. According to the 1980 decennial census, the median age for Illinois in 1980 was 29.9 years, lower than the 32.6 years estimated for 1991. The crude death rate and the total number of deaths in 1991 would have been lower had the age structure remained the same as in 1980.

Age-specific death rates by sex and race for Illinois show that for each sex/age group, nonwhites had higher death rates than whites (Text Table 11). Nevertheless, the crude (all ages) death rate for nonwhites was lower than that for whites, especially for females. Again, the differences between the age-specific rates for nonwhites and whites compared to the differences between the crude rates is due to differences in age structure, with the nonwhite population having higher proportions among the younger age groups than the white population.

TEXT TABLE 11. -- AGE-SPECIFIC DEATH RATES BY SEX AND RACE: ILLINOIS, 1991  
(Rates per 100,000 population in specified group)

Age (years)	Nonwhite			White		
	Total	Male	Female	Total	Male	Female
All ages . . . . .	820	963	691	917	931	904
Under 1 . . . . .	1,943	2,137	1,742	794	889	695
1-4 . . . . .	97	102	91	44	49	38
5-14 . . . . .	42	49	34	20	25	15
15-24 . . . . .	183	287	79	85	122	45
25-44 . . . . .	387	578	224	135	190	80
45-64 . . . . .	1,274	1,719	913	727	917	546
65 and over . . . . .	5,369	6,449	4,675	5,162	5,952	4,649

Differences also are apparent in the age-specific death rates between males and females. Among both nonwhites and whites, males exhibited higher death rates than females for every age group. The differences were particularly pronounced for the age groups 15 to 24, 25 to 44, and 45 to 64 years.

#### PERINATAL AND INFANT MORTALITY

Since many of the same causes underlie fetal deaths and deaths that occur among live-born infants soon after delivery, these losses are often combined and collectively termed "perinatal" deaths. Fetal deaths at 20 weeks gestation and later (and those of less than 20 weeks gestation for which fetal death certificates were filed) plus deaths of live-born infants younger than 7 days of age are used in this report to compute perinatal mortality. By this definition, there were 2,533 perinatal deaths among Illinois residents in 1991, comprising 1,418 fetal deaths and 1,115 early infant deaths (under 7 days), in total 120 fewer than in 1990. The 1991 perinatal mortality rate was 13.0 deaths per 1,000 fetal deaths and live births. This is a decrease of nearly 4 percent from the rate in 1990 and is consistent with the steady decline in perinatal mortality observed since 1965. Of total perinatal

deaths, blacks accounted for a disproportionate share: 40 percent (1,013). As in previous years, the perinatal mortality rate was more than twice as high for the black population (23.2) as it was for the white population (10.2). Even though the perinatal mortality rate among blacks has steadily declined since 1965, it has remained substantially higher than the rate among whites (Figure 5). Among Hispanics, the perinatal mortality rate was 10.1. For all races, the city of Chicago had a higher perinatal mortality rate than Downstate: 17.3 versus 11.0 (Table F).

FIGURE 5. -- PERINATAL MORTALITY RATES BY RACE: ILLINOIS, 1965-1991

In 1991 in Illinois, there were 1,367 infants who did not survive to 28 days old (neonatal mortality). This represents a neonatal mortality rate of 7.0 per 1,000 live births. This number of neonatal deaths and the rate were nearly the same as those in 1990 (1,368 and 7.0 respectively). In the last 20 years, the neonatal mortality rate has improved considerably from 16.5 in 1970 to 9.9 in 1980 and to 7.0 in 1991 (Table A). As in previous years, the neonatal death rate among black infants was more than twice as high as that among white infants in 1991: 13.5 per 1,000 live births for blacks compared with 5.3 for whites. The rate for Hispanics was 6.6.

In 1991, there were 701 infants who lived at least 28 days but less than 365 days (postneonatal mortality), or 3.6 deaths per 1,000 live births. Again, black infants in this age group showed a much



higher mortality rate than white infants; the postneonatal mortality rate for black infants was 7.5 per 1,000 compared with 2.5 for white infants and 3.2 for Hispanic infants.

In Illinois during 1991, the total number of infants who died before reaching 1 year old was 2,068 or 10.7 infant deaths per 1,000 live births. The infant mortality rate of 10.7 was identical to the 1990 value (Table A). However, the infant mortality rate for blacks (21.1) was nearly triple the rate for whites (7.9). Among Hispanics, the infant mortality rate was 8.6.

## MATERNAL MORTALITY

In 1991, 16 women were reported to have died of complications of pregnancy, childbirth, and the puerperium (the period of confinement after labor). The maternal mortality rate for 1991 was 8.2 deaths per 100,000 live births, down from 11.3 in 1990, and lower than the rate in 1980 (13.7). Although the maternal mortality rate has fluctuated during the 1980s, there has been a general downward trend (Figure 6).

FIGURE 6. -- MATERNAL MORTALITY RATES: 1970-1991

Of the 16 maternal deaths in 1991, six were among whites and 10 among blacks. By county of residence, Cook had 12 maternal deaths, and Du Page, Jackson, Kane, and Rock Island counties each had one.

## LEADING CAUSES OF DEATH

Maternal and infant deaths accounted for about 2 percent of the total deaths. In 1991, there were 103,871 deaths among Illinois residents and, as in 1990, the 12 leading causes of death accounted for approximately 84 percent of these deaths. Approximately two out of three deaths were caused by the first three leading causes of death: heart disease, malignant neoplasms (cancer) and cerebrovascular disease (stroke). Appendix 3 provides the classification of cause-of-death data presented in this publication.

Among the 12 leading causes of death (Tables O and P), there were some changes in their rankings from 1990 to 1991. Deaths due to chronic obstructive pulmonary disease and allied conditions moved ahead of pneumonia and influenza as well as unintentional injuries (formerly called accidents) so that in 1991 the fourth leading cause was chronic obstructive pulmonary disease. Pneumonia and influenza was ranked fifth. Unintentional injuries ranked sixth in 1991. Homicide rose from 10th to eighth among the leading causes in 1991 while suicide was ranked 11th. In 1991, congenital anomalies and perinatal conditions were separated into two causes: congenital anomalies, with 1,066 deaths, and certain conditions originating in the perinatal period, with 566 deaths. These two causes, combined into a single cause as in previous years, would have ranked eighth in 1991, above homicides and below diabetes mellitus.

Death rates were higher in 1991 than in 1990 for eight leading causes: heart disease; cerebrovascular disease; chronic obstructive pulmonary disease and allied conditions; diabetes mellitus; homicide; nephritis, nephrotic syndrome and nephrosis; septicemia; and suicide. The largest increase was for nephritis, nephrotic syndrome and nephrosis, which rose from 10.4 to 11.7 deaths per 100,000 population, or 12.5 percent. The next largest increase was for homicide, which rose from 11.7 to 12.5, or 6.8 percent. The largest decline was for unintentional injuries, which decreased between 1990 and 1991 from 33.8 to 32.3 deaths per 100,000 population, a 4.4 percent decrease. The second largest decline was for cirrhosis of the liver, which decreased from 12.0 to 11.7, or 2.5 percent.

Rates and ranks for the 12 leading causes of death varied by age (Tables P and Q). Among the 12 listed causes, unintentional injuries was the leading cause of death for persons under the age of 45 years. For persons 15 to 24 years of age, homicide was the second leading cause of death, with 30.8 deaths per 100,000 population, higher than the rate for deaths involving motor vehicles (26.3), a subcategory of unintentional injuries. For persons in the age group 25 to 44 years, the second most common cause was malignant neoplasms (26.9). The leading cause of death among persons 45 to 64 years of age was malignant neoplasms (296.8), followed by heart disease (240.8). For persons 65 years of age and over, the leading cause of death was heart disease, followed by malignant neoplasms.

The leading causes of death among whites and nonwhites were not the same for all age groups. For example, homicide was the most frequent cause of death among nonwhites 15 to 24 and 25 to 44 years of age and was the third most frequent cause of death among nonwhites overall in 1991 (Table H). Age-specific death rates for homicide among nonwhites were higher than those for whites in every age group (Table P). In contrast, age-specific suicide rates were higher among whites than nonwhites, especially for those 65 years of age and over. Deaths from heart disease and malignant neoplasms were commonly the leading two causes of death for both whites and nonwhites, accounting for 59.4 percent of all deaths among whites and 49.0 percent of all nonwhite deaths.

Chicago had higher death rates than Downstate for all the leading causes except cerebrovascular disease, suicide, and chronic obstructive pulmonary diseases and allied conditions (Table P). Ten leading causes of death by race are given in Table H. The 12 leading causes of death for residents of Illinois, Chicago and Downstate are given in Table O with corresponding rates in Table P. Table Q shows leading causes of death for selected age groups.

## OTHER CAUSES OF DEATH

The next most frequent causes of death in 1991 were certain conditions originating in the perinatal period (1,066), human immunodeficiency virus (HIV) infection (1,050), aortic aneurism (810), Alzheimer's disease (708), and general atherosclerosis (684).

## DEATHS FROM DRUGS

Deaths from drugs, excluding those from therapeutic misadventure, accounted for 511 deaths in 1991, four more than in 1990 (Text Table 12). Thirty more people 15 to 24 years of age died from drugs in 1991 than in 1990. Deaths from drugs were lower in 1991 than 1990 for all other age groups except those 35 to 44 years of age.

There were, however, many more deaths from drugs in 1991 than in 1980. While the number of deaths from drugs among persons 15 to 24 years of age declined, down from 70 in 1980 to 57 in 1991, the rate of death from drugs increased slightly. Deaths from drugs among those in all other age groups rose from 1980 to 1991. The largest increase was in the age group 35 to 44 years, which rose from a 1980 rate of 3.3 deaths per 100,000 population to 10.0 in 1991, or an increase of 134 deaths.

Among all deaths from drugs, 15 were classified as being due to drug dependence, seven to nondependent abuse of drugs, 355 to accidents, and 118 to suicides. There was one homicide and 15 other deaths due to drugs where the cause could not be determined.

TEXT TABLE 12. -- RESIDENT DEATHS AND DEATH RATES BY AGE FOR DEATHS FROM DRUGS<sup>(1)</sup>: ILLINOIS, 1980 AND 1989-1991  
(Rates per 100,000 population in specified age group)

Age (years)	Deaths due to drugs							
	Number				Rate			
	1991	1990	1989	1980	1991	1990	1989	1980
All ages .....	511	509	570	303	4.4	4.4	4.9	2.6
15-24 .....	57	27	67	70	3.4	1.6	3.9	3.3
25-34 .....	157	169	190	109	7.9	8.5	9.1	5.9
35-44 .....	177	163	189	43	10.0	9.5	11.1	3.3
45-54 .....	50	57	55	36	4.2	4.9	4.6	3.1
55-64 .....	30	35	27	27	3.1	3.6	2.6	2.4
65 and over .....	36	54	40	16	2.5	3.8	2.8	1.3

<sup>(1)</sup>Deaths assigned to category numbers 292, 304, 305.2-305.9, E850-E858, E950.0-E950.5, E962.0, E980.0-E980.5 of the 9th Revision International Classification of Diseases

#### YEARS OF POTENTIAL LIFE LOST (YPLL)

In 1991, among Illinois residents, there were an estimated 586,527 "years of potential life lost" (YPLL). YPLL is calculated by subtracting each decedent's age in years from 65 among those who died before reaching age 65 years and summing those numbers into a total. Age 65 is used as an arbitrary standard for the upper limit of "potential life." The average YPLL per death is calculated by dividing YPLL by the number of persons who died before reaching age 65. The 1991 Illinois average YPLL per death was 20.4 years (Table 13). This is higher than the 1989 and 1990 values of 20.1 and 20.0 years, respectively. (The higher the average YPLL per death, the younger the age below 65 years persons are dying, on average.)

Illinois' seven largest contributing causes of death to YPLL were unintentional injuries (91,083 years, of which 46,728 years are attributable to motor vehicle accidents), malignant neoplasms (82,331), certain conditions originating in the perinatal period (68,967), heart disease (68,362), homicide (49,461), congenital anomalies (31,339), and HIV infection (27,062). A comparison of the seven largest contributing causes of death to YPLL for Chicago and Downstate shows some differences (Figures 7 and 8). In Chicago, homicide was the largest contributing cause of death to YPLL and comprised 14.2 percent of all Chicago YPLL. For Downstate, homicide was the seventh largest contributing cause and accounted for 4.4 percent of all Downstate YPLL. The sixth largest contributing cause of death to YPLL for Chicago was HIV infection, which did not appear among the seven largest causes for Downstate. Similarly, the sixth largest contributing cause for Downstate was suicide, which did not appear among the seven largest causes for Chicago.

TEXT TABLE 13. -- THE SEVEN LEADING CAUSES OF DEATH CONTRIBUTING TO YEARS OF POTENTIAL LIFE LOST (YPLL) FOR ILLINOIS RESIDENTS: 1991

Cause of death		YPLL	Percent of total	Deaths age 0-64	Average number of YPLL per death age 0-64 years
1	Unintentional injuries	91,083	15.5	2,729	33.4
2	Malignant neoplasms	82,331	14.0	7,546	10.9
3	Certain perinatal conditions	68,967	11.8	1,064	64.8
4	Heart disease	68,362	11.7	6,186	11.1
5	Homicide	49,461	8.4	1,396	35.4
6	Congenital anomalies	31,339	5.3	529	59.2
7	HIV infection	27,062	4.6	1,027	26.4
	All other causes	167,922	28.6	8,327	20.2
	TOTAL	586,527	100.0	28,804	20.4

The "average number of YPLL per death age 0-64 years" column in Text Table 13 illustrates the relative impact different causes of death contribute per death to YPLL. Causes of death where the average age at death is very young, such as certain conditions originating in the perinatal period and congenital anomalies, contribute heavily to YPLL per death (for Illinois, 64.8 and 59.2 years, respectively). The external causes of death of unintentional injuries, homicide, and suicide, along with the internal cause of HIV infection, more typically occur over a wider range of teen and adult ages, with death rates tapering toward the older adult ages. For Illinois, these causes of death contribute between 26.4 and 35.4 years per death to YPLL, on average. The two leading causes of death in Illinois, heart disease and malignant neoplasms, are the fourth and second largest contributing causes of death to YPLL because of the relatively late age at which death typically occurs for these causes. Therefore, each death due to these causes contributes relatively few years (approximately 11 years on average if the death occurred under age 65 years) or no years (if the death occurred at age 65 or over) to YPLL.

FIGURE 7. -- NUMBER OF YPLL\* FOR THE SEVEN LARGEST CONTRIBUTING  
CAUSES: CHICAGO, 1991

FIGURE 8. -- NUMBER OF YPLL\* FOR THE SEVEN LARGEST CONTRIBUTING  
CAUSES: DOWNSTATE, 1991

\* Years of potential life lost

## LIFE EXPECTANCY

The average expectation of life at birth represents the average number of years that a group of newborns would live if they were to collectively experience the age-specific death rates prevailing in 1989-91 throughout their lives. Life expectancy is calculated via a life table that combines death and population data to derive various mortality measures. (See Appendix 4 for a more complete explanation of life table functions and their derivation.)

In 1989-91, among all Illinois residents, the average life expectancy at birth was 75.0 years. For Illinois females the average life expectancy at birth was 78.4 years, and for Illinois males was 71.4 years (Text Tables 14 and 15). For 1979-81, the values were 77.3 years for females and 69.7 years for males. The 1989-91 life expectancies represent improvements from the previous decade of 1.1 years (1.4 %) for females and 1.7 years (2.4 %) for males. The difference in life expectancy at birth between the sexes decreased: females lived on average 7.6 years longer than males in 1979-81 and 7.0 years longer in 1989-91.

FIGURE 9. -- LIFE EXPECTANCY AT BIRTH BY RACE AND SEX:  
ILLINOIS, 1959-61 TO 1989-91

Among black Illinois residents, life expectancy at birth for 1989-91 was 72.3 years for females and 62.3 years for males (Text Tables 16 and 17). This represented no change from 1979-81 life expectancy for black females and a -0.8 year change (-1.3 %) for black males from the 63.1 years of average life expectancy at birth a decade earlier. This resulted in a 10.0 year difference in life expectancy at birth between the sexes for blacks for 1989-91, an increase from the 9.2 year difference in 1979-81.

Among white Illinois residents, average life expectancy at birth for 1989-91 was 79.5 years for females and 72.9 years for males (Text Tables 18 and 19). These values for 1979-81 were 78.2 years for white females and 70.7 years for white males. The gap between the sexes for life expectancy at birth was narrowed to 6.6 years for 1989-91 compared with 7.5 years in 1979-81. The gap between black and white life expectancy at birth, however, widened. For females, the 5.9 year difference in 1979-81 grew to a 7.2 year difference in 1989-91, and for males a 7.6 year difference increased to 10.6 years.

Figure 9 summarizes life expectancy at birth by race and sex for Illinois during the 30-year period from 1959-61 to 1989-91. The improvements in life expectancy during this period were an average of 6.3 years longer life from birth for black females, 1.3 more years for black males, 5.7 more years for white females, and 5.6 more years for white males. While the difference between black females and white females has narrowed from 7.8 years in 1959-61 to 7.2 years in 1989-91, the difference between black males and white males has increased over the same period from 6.3 years to 10.6 years. The largest improvements in life expectancy at birth for each of the race/sex groups all occurred from 1969-71 to 1979-81: 4.7 years for black females, 4.6 for black males, 3.2 years for white females, and 3.0 years for white males.

Although expectation of life at birth is the most often cited of the life expectancy values, it is useful to examine average remaining years of life at other ages. It is interesting to note, for example, that black infant mortality for both females and males has had a large enough influence that life expectancies at age 1 year were greater than at birth (both 0.7 years greater). This was not the case in the life tables for white females or white males. For all females in 1989-91, the life expectancy at age 40 years was an additional 40.4 years or a total average life expectancy of 80.4 years. This is 2.0 years greater compared to female life expectancy at birth. For all males, the values were an additional 34.8 years or living to age 74.8 years (3.4 years more compared to life expectancy at birth). For black females, life expectancy at age 40 was 76.2 years (white females, 81.0 years), and for black males it was 69.1 years (white males, 75.5 years). Similarly for age 65 years for black females, life expectancy was 82.1 years (white females, 84.1 years), and for black males it was 78.0 years (white males, 80.0 years).



TEXT TABLE 14. -- LIFE TABLE FOR FEMALES, ILLINOIS: 1989-91

Age at start of interval	Probability of dying during interval	Of 100,000 born alive		Stationary population		Average years of remaining lifetime
		Number living at start of interval	Number dying during interval	In the interval	In interval and all subsequent intervals	
x	${}_nq_x$	$l_x$	${}_nd_x$	${}_nL_x$	$T_x$	$e_x$
0	0.01036	100,000	1,036	99,055	7,841,977	78.42
1	0.00185	98,964	183	395,397	7,742,922	78.24
5	0.00097	98,780	96	493,648	7,347,525	74.38
10	0.00096	98,684	95	493,229	6,853,878	69.45
15	0.00240	98,590	237	492,375	6,360,648	64.52
20	0.00251	98,353	247	491,168	5,868,274	59.67
25	0.00316	98,106	310	489,786	5,377,106	54.81
30	0.00405	97,795	396	488,051	4,887,320	49.97
35	0.00592	97,399	576	485,661	4,399,269	45.17
40	0.00886	96,823	858	482,147	3,913,609	40.42
45	0.01394	95,964	1,338	476,785	3,431,462	35.76
50	0.02285	94,626	2,162	468,167	2,954,676	31.22
55	0.03559	92,465	3,291	454,708	2,486,509	26.89
60	0.05456	89,173	4,865	434,448	2,031,801	22.78
65	0.07967	84,308	6,717	405,797	1,597,352	18.95
70	0.12097	77,591	9,387	365,756	1,191,555	15.36
75	0.18228	68,205	12,433	311,439	825,800	12.11
80	0.28592	55,772	15,946	242,539	514,361	9.22
85	1.00000	39,826	39,826	271,822	271,822	6.83

TEXT TABLE 15. -- LIFE TABLE FOR MALES, ILLINOIS: 1989-91

Age at start of interval	Probability of dying during interval	Of 100,000 born alive		Stationary population		Average years of remaining lifetime
		Number living at start of interval	Number dying during interval	In the interval	In interval and all subsequent intervals	
x	${}_nq_x$	$l_x$	${}_nd_x$	${}_nL_x$	$T_x$	$e_x$
0	0.01254	100,000	1,254	98,860	7,140,558	71.41
1	0.00231	98,746	228	394,411	7,041,697	71.31
5	0.00117	98,517	115	492,296	6,647,286	67.47
10	0.00171	98,402	169	491,735	6,154,990	62.55
15	0.00634	98,233	623	489,713	5,663,254	57.65
20	0.00827	97,610	808	486,060	5,173,541	53.00
25	0.00866	96,803	839	481,990	4,687,481	48.42
30	0.01106	95,964	1,062	477,265	4,205,491	43.82
35	0.01372	94,903	1,302	471,371	3,728,227	39.28
40	0.01693	93,601	1,585	464,284	3,256,855	34.80
45	0.02460	92,016	2,263	454,899	2,792,571	30.35
50	0.03958	89,753	3,553	440,522	2,337,671	26.05
55	0.05991	86,200	5,164	419,042	1,897,149	22.01
60	0.09410	81,036	7,626	387,207	1,478,107	18.24
65	0.13974	73,410	10,258	342,572	1,090,901	14.86
70	0.20557	63,152	12,982	284,192	748,328	11.85
75	0.29359	50,169	14,729	214,334	464,136	9.25
80	0.41954	35,440	14,868	141,160	249,802	7.05
85	1.00000	20,572	20,572	108,642	108,642	5.28

TEXT TABLE 16. -- LIFE TABLE FOR BLACK FEMALES, ILLINOIS: 1989-91

Age at start of interval	Probability of dying during interval	Of 100,000 born alive		Stationary population		Average years of remaining lifetime
		Number living at start of interval	Number dying during interval	In the interval	In interval and all subsequent intervals	
x	${}_nq_x$	$l_x$	${}_nd_x$	${}_nL_x$	$T_x$	$e_x$
0	0.02332	100,000	2,332	97,925	7,226,745	72.27
1	0.00362	97,668	353	389,788	7,128,819	72.99
5	0.00168	97,314	164	486,133	6,739,031	69.25
10	0.00165	97,151	160	485,406	6,252,898	64.36
15	0.00338	96,991	328	484,199	5,767,492	59.46
20	0.00493	96,663	476	482,208	5,283,293	54.66
25	0.00715	96,187	687	479,316	4,801,086	49.91
30	0.00977	95,500	933	475,332	4,321,769	45.25
35	0.01464	94,566	1,384	469,588	3,846,437	40.67
40	0.02067	93,182	1,926	461,340	3,376,849	36.24
45	0.02766	91,256	2,524	450,450	2,915,509	31.95
50	0.04323	88,733	3,836	434,638	2,465,059	27.78
55	0.06132	84,897	5,206	412,224	2,030,421	23.92
60	0.08950	79,691	7,133	381,353	1,618,197	20.31
65	0.12174	72,558	8,833	341,447	1,236,844	17.05
70	0.16605	63,725	10,582	292,861	895,397	14.05
75	0.22781	53,143	12,106	235,997	602,536	11.34
80	0.32243	41,037	13,232	174,427	366,539	8.93
85	1.00000	27,805	27,805	192,112	192,112	6.91

TEXT TABLE 17. -- LIFE TABLE FOR BLACK MALES, ILLINOIS: 1989-91

Age at start of interval	Probability of dying during interval	Of 100,000 born alive		Stationary population		Average years of remaining lifetime
		Number living at start of interval	Number dying during interval	In the interval	In interval and all subsequent intervals	
x	${}_nq_x$	$l_x$	${}_nd_x$	${}_nL_x$	$T_x$	$e_x$
0	0.02724	100,000	2,724	97,596	6,229,831	62.30
1	0.00458	97,276	446	387,991	6,132,234	63.04
5	0.00197	96,831	191	483,667	5,744,244	59.32
10	0.00296	96,640	286	482,772	5,260,576	54.43
15	0.01217	96,354	1,173	479,120	4,777,804	49.59
20	0.01879	95,181	1,788	471,608	4,298,683	45.16
25	0.02303	93,392	2,150	461,803	3,827,075	40.98
30	0.02985	91,242	2,723	449,658	3,365,272	36.88
35	0.03785	88,519	3,351	434,424	2,915,614	32.94
40	0.04476	85,168	3,812	416,732	2,481,190	29.13
45	0.06124	81,356	4,983	394,889	2,064,458	25.38
50	0.08365	76,374	6,389	366,481	1,669,569	21.86
55	0.11129	69,985	7,788	331,217	1,303,088	18.62
60	0.15561	62,197	9,679	287,279	971,871	15.63
65	0.20285	52,518	10,653	236,335	684,592	13.04
70	0.27154	41,865	11,368	180,731	448,256	10.71
75	0.34548	30,497	10,536	125,501	267,525	8.77
80	0.43625	19,961	8,708	78,547	142,025	7.12
85	1.00000	11,253	11,253	63,478	63,478	5.64

TEXT TABLE 18. -- LIFE TABLE FOR WHITE FEMALES, ILLINOIS: 1989-91

Age at start of interval	Probability of dying during interval	Of 100,000 born alive		Stationary population		Average years of remaining lifetime
		Number living at start of interval	Number dying during interval	In the interval	In interval and all subsequent intervals	
x	${}_nq_x$	$l_x$	${}_nd_x$	${}_nL_x$	$T_x$	$e_x$
0	0.00728	100,000	728	99,332	7,945,861	79.46
1	0.00146	99,272	145	396,725	7,846,529	79.04
5	0.00082	99,127	81	495,420	7,449,804	75.15
10	0.00079	99,046	78	495,076	6,954,385	70.21
15	0.00221	98,967	219	494,300	6,459,308	65.27
20	0.00206	98,749	203	493,248	5,965,008	60.41
25	0.00247	98,546	243	492,141	5,471,760	55.53
30	0.00298	98,303	293	490,831	4,979,619	50.66
35	0.00438	98,010	430	489,071	4,488,788	45.80
40	0.00703	97,581	686	486,363	3,999,717	40.99
45	0.01192	96,895	1,155	481,864	3,513,354	36.26
50	0.01963	95,740	1,880	474,423	3,031,490	31.66
55	0.03178	93,860	2,983	462,451	2,557,068	27.24
60	0.05000	90,877	4,544	443,801	2,094,617	23.05
65	0.07514	86,333	6,487	416,562	1,650,816	19.12
70	0.11683	79,846	9,328	377,269	1,234,254	15.46
75	0.17883	70,518	12,610	322,685	856,985	12.15
80	0.28366	57,908	16,426	252,177	534,300	9.23
85	1.00000	41,482	41,482	282,123	282,123	6.80

TEXT TABLE 19. -- LIFE TABLE FOR WHITE MALES, ILLINOIS: 1989-91

Age at start of interval	Probability of dying during interval	Of 100,000 born alive		Stationary population		Average years of remaining lifetime
		Number living at start of interval	Number dying during interval	In the interval	In interval and all subsequent intervals	
x	${}_nq_x$	$l_x$	${}_nd_x$	${}_nL_x$	$T_x$	$e_x$
0	0.00916	100,000	916	99,162	7,290,045	72.90
1	0.00182	99,084	180	395,883	7,190,883	72.57
5	0.00102	98,903	101	494,264	6,795,000	68.70
10	0.00144	98,803	142	493,775	6,300,736	63.77
15	0.00513	98,660	506	492,115	5,806,960	58.86
20	0.00654	98,154	642	489,175	5,314,845	54.15
25	0.00642	97,512	626	486,050	4,825,670	49.49
30	0.00832	96,886	806	482,490	4,339,620	44.79
35	0.01029	96,080	988	478,037	3,857,130	40.15
40	0.01342	95,091	1,276	472,485	3,379,094	35.54
45	0.02000	93,815	1,877	464,837	2,906,609	30.98
50	0.03386	91,939	3,113	452,553	2,441,772	26.56
55	0.05347	88,825	4,749	433,239	1,989,219	22.39
60	0.08694	84,076	7,310	403,306	1,555,979	18.51
65	0.13339	76,766	10,240	359,540	1,152,673	15.02
70	0.20004	66,526	13,308	300,413	793,134	11.92
75	0.29006	53,218	15,437	227,959	492,721	9.26
80	0.42006	37,782	15,871	150,439	264,762	7.01
85	1.00000	21,911	21,911	114,323	114,323	5.22

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Mortality from Diabetes Mellitus Among Illinois Residents: 1969-71 to 1986-88

\*Available on microfiche only

TABLE A. -- LIVE BIRTHS, DEATHS, INFANT DEATHS, NEONATAL DEATHS, AND MATERNAL DEATHS,  
WITH RATES FOR EACH, AND FETAL DEATHS, WITH RATIOS, ILLINOIS: 1918 - 1991

(LIVE BIRTH RATES AND DEATH RATES PER 1,000 ESTIMATED MIDYEAR POPULATION. INFANT AND NEONATAL DEATH  
RATES AND FETAL DEATH RATIOS PER 1,000 LIVE BIRTHS. MATERNAL DEATH RATES PER 10,000 LIVE BIRTHS)

Year	Estimated population	Live births		Deaths		Infant deaths		Neonatal deaths		Maternal deaths		Fetal deaths	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Ratio
1991*	11,543,000	194,066	16.8	103,871	9.0	2,068	10.7	1,367	7.0	16	0.8	1,418	7.3
1990*	11,431,000	195,499	17.1	102,697	9.0	2,090	10.7	1,368	7.0	22	1.1	1,529	7.8
1989*	11,410,000	190,247	16.7	103,027	9.0	2,217	11.7	1,416	7.4	21	1.1	1,493	7.8
1988*	11,390,000	184,708	16.2	105,038	9.2	2,077	11.2	1,330	7.2	18	1.0	1,403	7.6
1987*	11,391,000	180,441	15.8	102,105	9.0	2,094	11.6	1,400	7.8	13	0.7	1,392	7.7
1986*	11,387,000	176,567	15.5	103,009	9.0	2,125	12.0	1,422	8.1	22	1.2	1,349	7.6
1985*	11,400,000	180,657	15.8	101,948	8.9	2,103	11.6	1,423	7.9	13	0.7	1,471	8.1
1984*	11,412,000	179,216	15.7	100,640	8.8	2,148	12.0	1,443	8.1	27	1.5	1,503	8.4
1983*	11,409,000	178,820	15.7	102,195	9.0	2,208	12.3	1,467	8.2	24	1.3	1,479	8.3
1982*	11,423,000	183,564	16.1	100,276	8.8	2,492	13.6	1,714	9.3	23	1.3	1,642	8.9
1981*	11,443,000	184,897	16.2	101,526	8.9	2,561	13.9	1,801	9.7	27	1.5	1,707	9.2
1980*	11,427,000	189,941	16.6	102,239	8.9	2,788	14.7	1,889	9.9	26	1.4	1,797	9.5
1979*	11,397,000	184,184	16.2	102,002	8.9	2,778	15.1	1,913	10.4	32	1.7	1,767	9.6
1978*	11,413,000	174,397	15.3	102,771	9.0	2,731	15.7	1,898	10.9	11	0.6	1,733	9.9
1977*	11,386,000	177,148	15.6	103,079	9.1	2,824	15.9	1,991	11.2	18	1.0	1,899	10.7
1976*	11,343,000	170,181	15.0	103,417	9.1	2,843	16.7	2,084	12.2	20	1.2	1,902	11.2
1975*	11,292,000	169,248	15.0	103,166	9.1	3,107	18.4	2,221	13.1	28	1.7	1,954	11.5
1974*	11,262,000	168,991	15.0	107,872	9.6	3,271	19.4	2,441	14.4	38	2.2	1,984	11.7
1973*	11,251,000	168,992	15.0	110,259	9.8	3,398	20.1	2,551	15.1	23	1.3	2,161	12.8
1972*	11,252,000	177,848	15.8	110,970	9.9	3,618	20.3	2,681	15.1	40	2.2	2,358	13.3
1971*	11,202,000	195,311	17.4	109,491	9.8	4,107	21.0	3,084	15.8	51	2.6	2,644	13.5
1970*	11,110,000	205,203	18.5	110,474	9.9	4,415	21.5	3,388	16.5	57	2.8	2,811	13.7
1969*	11,039,000	195,699	17.7	111,107	10.1	4,387	22.4	3,342	17.1	65	3.3	2,658	13.6
1968*	10,995,000	193,261	17.6	112,905	10.3	4,536	23.5	3,389	17.5	72	3.7	2,657	13.7
1967*	10,947,000	195,644	17.9	110,030	10.1	4,611	23.6	3,386	17.3	84	4.3	2,755	14.1
1966*	10,836,000	201,284	18.6	111,155	10.3	5,121	25.4	3,745	18.6	57	2.8	2,881	14.3
1965*	10,693,000	208,063	19.5	108,138	10.1	5,339	25.7	3,890	18.7	69	3.3	3,096	14.9
1964*	10,580,000	222,259	21.0	106,802	10.1	5,590	25.2	4,141	18.6	71	3.2	3,372	15.2
1963*	10,402,000	224,787	21.6	107,761	10.4	5,372	23.9	3,981	17.7	70	3.1	3,335	14.8
1962*	10,280,000	230,484	22.4	104,695	10.2	5,527	24.0	4,061	17.6	70	3.0	3,393	14.7
1961*	10,130,000	237,051	23.4	101,696	10.0	5,757	24.3	4,209	17.8	61	2.6	3,472	14.6
1960*	10,086,000	238,760	23.7	103,038	10.2	5,959	25.0	4,322	18.1	70	2.9	3,528	14.8
1959*	9,986,000	239,871	24.0	101,406	10.2	5,990	25.0	4,318	18.0	72	3.0	3,489	14.5
1958*	9,886,000	234,712	23.7	101,729	10.3	5,857	25.0	4,211	17.9	74	3.2	3,615	15.4
1957*	9,668,000	238,579	24.7	102,293	10.6	6,070	25.4	4,417	18.5	80	3.4	3,653	15.3
1956*	9,530,000	229,571	24.1	96,956	10.2	5,642	24.6	4,158	18.1	77	3.3	3,399	14.8
1955*	9,435,000	220,541	23.4	95,585	10.1	5,479	24.8	3,969	18.0	83	3.8	3,328	15.1
1954*	9,252,000	217,229	23.5	92,307	10.0	5,442	25.1	4,018	18.5	76	3.5	3,235	14.9
1953*	9,065,000	206,813	22.8	96,607	10.7	5,326	25.8	3,812	18.4	88	4.3	3,323	16.1
1952*	8,956,000	205,438	22.9	94,173	10.5	5,115	24.9	3,721	18.1	92	4.5	3,239	15.8
1951*	8,790,000	201,082	22.9	93,254	10.6	5,023	25.0	3,776	18.8	107	5.3	3,270	16.3
1950*	8,738,000	189,640	21.7	92,260	10.6	4,855	25.6	3,580	18.9	114	6.0	3,083	16.3
1949+	8,670,000	189,313	21.8	92,568	10.7	5,195	27.4	3,812	20.1	132	7.0	3,274	17.3
1948+	8,552,000	184,871	21.6	91,328	10.7	5,123	27.7	3,792	20.5	151	8.2	3,284	17.8
1947+	8,341,000	196,007	23.5	93,686	11.2	5,672	28.9	4,236	21.6	204	10.4	3,669	18.7
1946+	8,155,000	174,825	21.4	89,566	11.0	5,316	30.4	4,015	23.0	237	13.6	3,667	21.0
1945+	7,601,000	138,705	18.2	90,116	11.9	4,377	31.6	3,001	21.6	235	16.9	2,951	21.3

TABLE A. (Continued)

(LIVE BIRTH RATES AND DEATH RATES PER 1,000 ESTIMATED MIDYEAR POPULATION. INFANT AND NEONATAL DEATH RATES AND FETAL DEATH RATIOS PER 1,000 LIVE BIRTHS. MATERNAL DEATH RATES PER 10,000 LIVE BIRTHS)

Year	Estimated population	Live births		Deaths		Infant deaths		Neonatal deaths		Maternal deaths		Fetal deaths	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Ratio
1944+	7,719,000	142,005	18.4	88,180	11.4	4,602	32.4	3,107	21.9	254	17.9	3,158	22.2
1943+	7,761,000	155,735	20.1	92,058	11.9	5,184	33.3	3,474	22.3	320	20.5	3,470	22.3
1942+	8,057,000	156,232	19.4	87,777	10.9	5,170	33.1	3,613	23.1	326	20.9	3,445	22.1
1941+	7,995,000	136,159	17.0	86,582	10.8	4,661	34.2	3,215	23.6	340	25.0	3,186	23.4
1940+	7,905,000	124,615	15.8	89,099	11.3	4,398	35.3	3,004	24.1	369	29.6	3,152	25.3
1939++	7,890,000	117,841	14.9	86,994	11.0	4,474	38.0	3,011	25.6	370	31.4	2,978	25.3
1938++	7,866,000	122,562	15.6	84,769	10.8	5,016	40.9	3,244	26.5	412	33.6	3,207	26.1
1937++	7,857,000	115,282	14.7	87,739	11.2	4,967	43.1	3,208	27.8	450	39.0	3,058	26.5
1936++	7,840,000	112,167	14.3	92,806	11.6	5,246	46.8	3,315	29.6	500	44.6	3,099	27.6
1935++	7,797,000	111,884	14.3	85,518	11.0	5,138	45.9	3,380	30.2	555	49.6	3,308	29.6
1934++	7,772,000	110,226	14.2	87,205	11.2	5,825	52.8	3,633	33.0	568	51.5	3,333	30.2
1933++	7,768,000	107,910	13.9	82,513	10.6	5,284	49.0	3,402	31.5	537	49.8	3,219	29.8
1932++	7,736,000	111,512	14.4	83,180	10.8	5,884	52.8	3,639	32.6	625	56.0	3,446	30.9
1931++	7,687,000	118,788	15.5	85,788	11.2	6,961	58.6	4,067	34.2	659	55.5	4,080	34.3
1930++	7,644,000	128,121	16.8	83,591	10.9	7,152	55.8	4,356	34.0	699	54.6	4,311	33.6
1929++	7,606,000	128,633	16.9	87,788	11.5	7,901	61.4	4,751	36.9	874	67.9	4,452	34.6
1928++	7,576,000	129,667	17.1	90,195	11.9	8,326	64.2	4,760	36.7	743	57.3	4,677	36.1
1927++	7,519,000	133,662	17.8	82,849	11.0	8,605	64.4	4,989	37.3	743	55.6	4,693	35.1
1926++	7,395,000	133,939	18.1	85,331	11.5	9,294	69.4	5,043	37.7	871	65.0	4,879	36.4
1925++	7,306,000	135,437	18.5	81,593	11.2	9,822	72.5	5,156	38.1	789	58.3	4,885	36.1
1924++	7,215,000	137,118	19.0	77,133	10.7	9,734	71.0	5,475	39.9	844	61.6	5,290	38.6
1923++	7,068,000	131,920	18.7	81,753	11.6	10,809	81.9	5,467	41.4	846	64.1	5,157	39.0
1922++	6,958,000	134,050	19.3	75,771	10.9	10,195	76.1	5,438	40.6	847	63.2	4,826	36.0
1921++	6,858,000	NA	NA	73,424	10.7	10,674	NA	5,620	NA	944	NA	NA	NA
1920++	6,663,000	NA	NA	82,296	12.4	11,641	NA	5,584	NA	1,141	NA	NA	NA
1919++	6,392,000	NA	NA	77,256	12.1	11,148	NA	5,317	NA	960	NA	NA	NA
1918++	6,275,000	NA	NA	100,396	16.0	13,109	NA	5,897	NA	1,160	NA	NA	NA

\* 1950 - 1991: Resident data from tabulations in Illinois Department of Public Health.  
(1953 - 1954 Maternal deaths from Vital Statistics of the United States)

+ 1940 - 1949: Resident data from Vital Statistics of the United States for each year.

++ 1918 - 1939: Occurrence data from United States Bureau of the Census publications.

NA (not available): Illinois was admitted to the United States Birth Registration Area in 1922.

Population Estimates: United States Bureau of the Census Series P-25, Nos. 139, 304, 460, 957, and 1058.







TABLE D. -- RESIDENT TOTAL LIVE BIRTHS WITH NUMBERS  
AND RATIOS OF BIRTHS TO UNMARRIED WOMEN,  
ILLINOIS: 1950-1991

(Ratios per 1,000 live births)

Year	Total live births	Unmarried women	
		Number	Ratio
1950	189,640	6,836	36.0
1951	201,082	7,425	36.9
1952	205,438	7,916	38.5
1953	206,813	8,742	42.3
1954	217,229	9,809	45.2
1955	220,541	10,625	48.2
1956	229,571	11,312	49.3
1957	238,579	12,055	50.5
1958	234,712	12,626	53.8
1959	239,871	14,043	58.5
1960	238,760	14,385	60.2
1961	237,051	15,546	65.6
1962	230,484	15,678	68.0
1963	224,787	16,015	71.2
1964	222,259	16,881	76.0
1965	208,063	18,216	87.6
1966	201,284	19,140	95.1
1967	195,644	20,147	103.0
1968	193,261	21,735	112.5
1969	195,699	23,862	121.9
1970	205,203	27,655	134.8
1971	195,311	29,205	149.5
1972	177,848	29,971	168.5
1973	168,992	29,782	176.2
1974	168,991	28,970	171.4
1975	169,248	31,503	186.1
1976	170,181	33,075	194.4
1977	177,148	35,528	200.6
1978	174,397	36,161	207.3
1979	184,184	40,396	219.3
1980	189,941	42,749	225.1
1981	184,897	42,352	229.1
1982	183,564	42,638	232.3
1983	178,820	42,893	239.9
1984	179,216	44,796	250.0
1985	180,657	46,453	257.1
1986	176,567	47,817	270.8
1987	180,441	50,611	280.5
1988	184,708	54,381	294.4
1989	190,247	58,866	309.4
1990	195,499	62,052	317.4
1991	194,066	63,172	325.5





TABLE G. - LEADING CAUSES OF INFANT DEATHS BY AGE:  
ILLINOIS, 1991

(Refers only to resident deaths. Excludes fetal deaths.)

Rank	Cause	9th Rev. No. <sup>(1)</sup>	Infant	Neonatal			Post- neonatal
			Under 1 year	Total	Under 7 days	7-27 days	28-364 days
	All causes .....		2,068	1,367	1,115	252	701
1	Respiratory conditions of newborn .....	768-770 ...	414	386	326	60	28
	a. Intrauterine hypoxia and birth asphyxia .....	768 .....	(44)	(42)	(38)	(4)	(2)
	b. Respiratory distress syndrome .....	769 .....	(186)	(182)	(157)	(25)	(4)
	c. Other .....	770 .....	(184)	(162)	(131)	(31)	(22)
2.	Congenital anomalies .....	740-759 ...	387	274	199	75	113
3.	Sudden infant death syndrome .....	798.0 ...	307	26	3	23	281
4.	Disorders relating to short gestation and unspecified low birthweight .....	765 .....	284	282	277	5	2
5.	Maternal complications of pregnancy .....	761 .....	102	102	102	--	--
6.	Unintentional injuries .....	E800-E949	55	3	1	2	52
7.	Complications of placenta, cord and membranes .....	762 .....	45	45	43	2	--
7.	Infections specific to the perinatal period .....	771 .....	45	39	20	19	6
9.	Neonatal hemorrhage .....	772 .....	33	32	22	10	1
10.	Perinatal disorders of digestive system .....	777 .....	32	27	8	19	5
	All other causes .....		364	151	114	37	213

<sup>(1)</sup>Numbers are category numbers of the Ninth Revision International Classification of Diseases (ICD-9).













TABLE N. DEATHS AND DEATH RATES FROM THE PRINCIPAL DISEASES AFFECTING THE RESPIRATORY SYSTEM, ILLINOIS: 1950, 1960, 1970, 1980, 1985, 1990 and 1991

Cause of death	ICD-9* Number	Number of deaths							Deaths per 100,000 population						
		1991	1990	1985	1980	1970	1960	1950	1991	1990	1985	1980	1970	1960	1950
Tuberculosis of respiratory system . . . .	010-012	69	61	49	97	215	579	1,950	0.6	0.5	0.4	0.8	1.9	5.7	22.3
Cancer of respiratory system (Total). . .	160-165	6,829	6,767	6,318	5,570	3,922	2,602	1,499	59.2	59.2	55.4	48.7	35.3	25.8	17.2
a. Bronchus, trachea and lung, primary . . . . .	(162)	(6,712)	(6,525)	(6,074)	(5,337)	(3,672)	(1,106)	(580)	(58.1)	(57.1)	(53.3)	(46.7)	(33.0)	(11.0)	(6.6)
Asthma . . . . .	493	257	248	177	149	124	305	228	2.2	2.2	1.6	1.3	1.1	3.0	2.6
Acute upper respiratory . . . . .	460-465	15	9	11	22	29	38	70	0.1	0.1	0.1	0.2	0.3	0.4	0.8
Influenza . . . . .	487	44	93	75	104	97	170	126	0.4	0.8	0.7	0.9	0.9	1.7	1.4
Pneumonia . . . . .	480-486	3,880	3,864	3,201	2,445	3,360	4,256	2,483	33.6	33.8	28.1	21.4	30.2	42.2	28.4
466, Bronchitis, acute and chronic . . . . .	490-491	186	186	208	226	655	182	163	1.6	1.6	1.8	2.0	5.9	1.8	1.9
Bronchiectasis . . . . .	494	36	37	33	33	60	104	98	0.3	0.3	0.3	0.3	0.5	1.0	1.1
Emphysema . . . . .	492	865	808	691	760	1,199	467	63	7.5	7.1	6.1	6.6	10.8	4.6	0.7
470-478 Other respiratory . . . . .	495-519	3,893	3,820	3,344	2,142	485	308	235	33.7	33.4	29.3	18.7	4.4	3.1	2.7
a. Chronic obstructive lung disease, NEC . . . . .	(496)	(2,613)	(2,560)	(2,256)	(1,430)	(NA)	(NA)	(NA)	(22.6)	(22.4)	(19.8)	(12.5)	(NA)	(NA)	(NA)

NA Not available

\*Numbers after causes of death are category numbers of the 9th Revision International Classification of Diseases. For 1970, causes are classified according to the 8th Revision; prior to 1970, according to the 7th Revision.















TABLE Q. -- LEADING CAUSES OF DEATH BY SELECTED AGE GROUPS, ILLINOIS  
RESIDENTS: 1991

(For ages under 1 year, see Table G)

Age 1 - 4 years			
Rank	Cause	9th Rev. Number <sup>(1)</sup>	Number
	All causes		383
1.	Unintentional injuries	E800-E949	148
	a. Motor vehicle	E810-E825	(33)
	b. All other	E800-E807, E826-E949	(115)
2.	Congenital anomalies	740-759	46
3.	Malignant neoplasms	140-208	26
4.	Homicide	E960-E978	22
4.	Heart disease	393-398, 402, 404-429	22
6.	Pneumonia and influenza	480-487	18
7.	Certain conditions originating in the perinatal period	760-779	7
7.	Infantile cerebral palsy	343	7
9.	Chronic obstructive pulmonary disease and allied conditions	490-496	6
9.	Meningitis	320-322	6
Age 5 - 14 years			
	All causes		408
1.	Unintentional injuries	E800-E949	156
	a. Motor vehicle	E810-E825	(73)
	b. All other	E800-E807, E826-E949	(83)
2.	Malignant neoplasms	140-208	54
3.	Homicide	E960-E978	39
4.	Heart disease	393-398, 402, 404-429	23
5.	Congenital anomalies	740-759	18
6.	Infantile cerebral palsy	343	16
7.	Suicide	E950-E959	13
8.	Cerebrovascular disease	430-438	8
9.	Chronic obstructive pulmonary disease and allied conditions	490-496	7
10.	Human immunodeficiency virus infection	042-044	4
Age 15 - 24 years			
	All causes		1,748
1.	Unintentional injuries	E800-E949	625
	a. Motor vehicle	E810-E825	(434)
	b. All other	E800-E807, E826-E949	(191)
2.	Homicide	E960-E978	509
3.	Suicide	E950-E959	211
4.	Malignant neoplasms	140-208	71
5.	Heart disease	393-398, 402, 404-429	67
6.	Congenital anomalies	740-759	25
7.	Human immunodeficiency virus infection	042-044	21
8.	Pneumonia and influenza	480-487	20
9.	Chronic obstructive pulmonary disease and allied conditions	490-496	16
10.	Cerebrovascular disease	430-438	12
10.	Injury undetermined whether accidentally or purposely inflicted	E980-E989	12

TABLE Q. -- LEADING CAUSES OF DEATH BY SELECTED AGE GROUPS, ILLINOIS RESIDENTS: 1991-- CONTINUED

(For ages under 1 year, see Table G)

Age 25 - 44 years			
Rank	Cause	9th Rev. Number <sup>(1)</sup>	Number
	All causes		6,735
1.	Unintentional injuries	E800-E949	1,182
	a. Motor vehicle	E810-E825	(579)
	b. All other	E800-E807, E826-E949	(603)
2.	Malignant neoplasms	140-208	1,009
3.	Heart disease	393-398, 402, 404-429	866
4.	Human immunodeficiency virus infection	042-044	798
5.	Homicide	E960-E978	630
6.	Suicide	E950-E959	447
7.	Chronic liver disease and cirrhosis	571	326
8.	Cerebrovascular disease	430-438	164
9.	Pneumonia and influenza	480-487	133
10.	Diabetes mellitus	250	114
Age 45 - 64 years			
	All causes		17,462
1.	Malignant neoplasms	140-208	6,384
2.	Heart disease	393-398, 402, 404-429	5,179
3.	Cerebrovascular disease	430-438	694
4.	Unintentional injuries	E800-E949	563
	a. Motor vehicle	E810-E825	(260)
	b. All other	E800-E807, E826-E949	(303)
5.	Chronic obstructive pulmonary disease and allied conditions	490-496	552
6.	Chronic liver disease and cirrhosis	571	547
7.	Diabetes mellitus	250	470
8.	Pneumonia and influenza	480-487	295
9.	Suicide	E950-E959	267
10.	Human immunodeficiency virus infection	042-044	202
Age 65 years and over			
	All causes		75,067
1.	Heart disease	393-398, 402, 404-429	29,375
2.	Malignant neoplasms	140-208	16,842
3.	Cerebrovascular disease	430-438	5,995
4.	Pneumonia and influenza	480-487	3,427
5.	Chronic obstructive pulmonary disease and allied conditions	490-496	3,267
6.	Diabetes mellitus	250	1,713
7.	Nephritis, nephrotic syndrome and nephrosis	580-589	1,142
8.	Unintentional injuries	E800-E949	1,003
	a. Motor vehicle	E810-E825	(273)
	b. All other	E800-E807, E826-E949	(730)
9.	Septicemia	038	881
10.	Alzheimer's disease	331.0	697

<sup>(1)</sup>Numbers are category numbers of the Ninth Revision International Classification of Diseases (ICD-9).

TABLE R. MARRIAGES, DIVORCES AND ANNULMENTS OCCURRING IN ILLINOIS  
1958 TO 1991

(Rates per 1,000 estimated population)

Year	Marriages		Divorces and annulments			
	Number	Rate	Total	Rate	Divorces	Annulments
1958	83,400	8.4	20,870	2.1	20,719	151
1959	87,281	8.7	22,700	2.3	22,566	134
1960	88,029	8.7	21,870	2.2	21,652	218
1961	88,692	8.8	25,973	2.6	25,712	261
1962	87,645	8.5	18,820*	1.8	18,634	186
1963	93,240	9.0	20,765*	2.0	20,519	246
1964	97,171	9.2	21,283*	2.0	21,050	233
1965	100,978	9.4	24,654	2.3	24,326	328
1966	102,622	9.5	27,862	2.6	27,488	374
1967	105,295	9.6	28,473	2.6	28,147	326
1968	112,449	10.2	32,119	2.9	31,713	406
1969	116,532	10.6	35,974	3.3	35,558	416
1970	115,478	10.4	36,450	3.3	36,054	396
1971	115,826	10.3	40,136	3.6	39,753	383
1972	118,592	10.5	43,092	3.8	42,628	464
1973	119,843	10.7	45,152	4.0	44,671	481
1974	116,419	10.3	48,361	4.3	47,878	483
1975	111,459	9.9	50,954	4.5	50,452	502
1976	110,847	9.8	51,810	4.6	51,317	493
1977	108,100	9.5	48,980	4.3	48,566	414
1978	105,946	9.3	50,311	4.4	49,761	550
1979	108,480	9.5	52,133*	4.6	51,832	301
1980	109,823	9.6	50,997	4.5	50,728	269
1981	109,074	9.5	51,789	4.5	51,536	253
1982	107,023	9.4	49,639	4.3	49,363	276
1983	103,773	9.1	50,356	4.4	50,113	243
1984	102,418	9.0	48,897	4.3	48,670	227
1985	97,701	8.6	48,885	4.3	48,682	203
1986	96,189	8.4	45,852	4.0	45,675	177
1987	95,613	8.4	46,986	4.1	46,800	186
1988	78,302	6.9	45,911	4.0	45,736	175
1989	85,695	7.5	45,877	4.0	45,676	201
1990	100,632	8.8	45,977	4.0	45,819	158
1991	94,771	8.2	45,813	4.0	45,659	154

\*Reporting known to be incomplete.































## APPENDIX 1. DATA SOURCES AND ANALYSIS

## VITAL RECORDS SYSTEM

State statute requires that all vital record certificates be filed with the Illinois Department of Public Health. The director of the Department is also the state registrar who, in turn, delegates authority to the deputy state registrar to administer and enforce the Vital Records Act. The requirement to register births and deaths was first included in the legislation that established the State Board of Health in 1877. However, the law did not provide workable enforcement, and the system failed for lack of central legal control over the data collection process. After several attempts, a law incorporating the elements of an efficient system became effective January 1, 1916. Slight modifications were made over the years until January 1, 1962, when the current law, including several significant provisions, became effective.

The original live birth, death, and fetal death certificates are collected by local registrars of vital records who are appointed by, and are under direct supervision of, the state registrar. Local registrars keep a copy of each certificate for their files and for the files of the county clerk and send the original to the Illinois Department of Public Health. (See Exhibits 1 through 6 for copies of sample certificates.)

Insuring that a certificate of live birth is filed is the responsibility of the hospital administrator when the birth occurs in a hospital. The attending physician verifies or provides the date of birth and required medical information. When births occur outside hospitals, the physician or other attendant prepares and files the certificate.

Funeral directors must file death certificates with the local registrar in the area in which the death occurred in order to obtain legally necessary burial or removal permits. (A fetal death certificate must be prepared if the fetus is determined to be a product of 20 or more completed weeks of gestation and not born alive.) Medical certification, including a determination of the cause of death, is completed by the physician in charge of the decedent's care unless a coroner's or medical examiner's certificate is filed. A physician may request that a coroner or medical examiner review any death.

The coroner's physician, whose position was established by the Coroner's Act of 1957, is unique in Illinois. When requested, the coroner's physician investigates a death involving a motor vehicle accident, other accidents and forms of violence, suspicious circumstances, or a person found dead. Programs related to boating, recreational gun usage, highway safety, hazardous substance control, drug abuse, law enforcement, suicide prevention, hospital and nursing home construction, home construction, home safety and pesticide control rely heavily on the findings of the coroner, the coroner's physician and, in Cook County, the medical examiner.

The registration system also provides for amendments of birth and death certificates, preparation of new documents for adopted and legitimated children, and the certification of the contents of a record when a citizen needs it.

Central registration of marriages and divorces began on January 1, 1962. Prior to that date, annual counts of marriages and divorces by county were made intermittently. Since 1962, marriage records are filed directly with the Illinois Department of Public Health by county clerks. The application record combines information supplied by applicants for the license and by the marriage officiant. Certificates of divorce or annulment are filed directly with the Department by the clerk of the circuit court. Each certificate contains information supplied by the attorney for the petitioner and from the divorce or annulment decree.

The Division of Vital Records inspects the certificates and requests supplemental information on those that are incomplete, inconsistent or unclear. When a certificate is judged to be acceptable, coded information from the certificate is entered on magnetic tapes for statistical purposes and this information is shared with the National Center for Health Statistics. In 1985, the Division of Vital Records introduced an on-line live birth record system for all births occurring in Illinois.

#### CUTOFF DATES AND INTERSTATE EXCHANGE

There is no cutoff date for the filing of a vital record as a legal document. However, there must be a cutoff date for inclusion of events in a publication. The cutoff date for 1991 events was April 1992.

Copies of vital record certificates pertaining to persons who were born or died outside of the state of residence are exchanged, usually on a monthly basis, with all of the states and the Canadian provinces. The original birth, fetal death, or death certificate is never released or received in these transactions. There is no exchange of marriage, divorce or annulment data.

#### RACIAL CLASSIFICATION

For statistical purposes, vital events in Illinois are classified by race into white, black, American Indian, Chinese, Hawaiian, Japanese, Filipino, other Asian or Pacific Islander and other. Racial classification for a decedent, bride, groom or for divorcing spouses is based on race stated on the vital record certificate. Prior to 1989, the racial designation used for a live birth or fetal death was determined through an algorithm based on the race of both parents, as reported on the certificate. Since data year 1989, racial classification of live births and fetal deaths has been based solely on the reported race of the mother.

The tables in this report do not show data for a detailed classification by race. In some tables the divisions are white, black, and other. In other tables the classifications are simply white and nonwhite.

## HISPANIC ORIGIN

In 1979, an item was added to the birth and death certificates to identify ethnic origin of a newborn's parents and of a decedent. An open ended format was used to obtain the specific origin or descent (e.g., Italian, Mexican, English). In 1989, the item was changed to a format directed toward the Hispanic population, requesting only the specific Hispanic origin (e.g., Mexican, Puerto Rican).

## COMPUTATION OF PERCENTS

Births with unknown age of mother, month of pregnancy in which prenatal care began, educational attainment of mother, method of delivery, and Apgar scores were subtracted from the figures for total births that were used as denominators before percentages were computed. Percent distributions for marriages and divorces also exclude cases for which the pertinent information (e.g., duration of marriage) is not stated.

## INTERPRETATION OF VITAL STATISTICS

Qualifying factors to be considered in the interpretation of vital statistics depend on the specific administrative, scientific or planning purposes for which the data are to be used. It is not feasible to discuss all of the pertinent factors in the use of vital statistics, but the following are some of the more important ones that should be taken into account:

1. Incomplete information. There are failures to provide certain types of information requested on the vital records certificates. Also, the classification systems used to prepare information on the certificates for tabulation do not employ categories that are suitable for every purpose.
2. Erroneous information. Despite procedures used to obtain, process and transmit accurate information, the user of vital statistics should not disregard the possibility of errors.
3. Lack of precise populations exposed to risk requires using estimates that may, in some instances, be inaccurate.
4. Crude rates. Most rates in this report are not adjusted to control for differences in the age, race or sex composition of populations in different geographical areas or at

different periods of time. Divorce rates are not adjusted for peaks in marriage registrations in earlier years.

5. Some tables are designed to focus attention on selected risk groups. Other risk factors could have been selected.
6. Rate stability. Rates based on a small number of events tend to exhibit considerable variation over time because of chance fluctuations. Excessive variation in rates not only negates their utility as estimators of a probability of an event occurring, but also negates their usefulness for comparative purposes.

In Part II of this report, an asterisk is substituted for a printed rate if the rate is based on a numerator less than 10 or a denominator less than 100. These criteria have been adopted to avoid printing rates that are subject to especially large fluctuations.

The numbers "10" and "100" are arbitrary and are not set forth as critical points distinguishing statistically reliable rates from unreliable rates.

To obtain meaningful information for small areas (e.g., counties), rates are presented in Part II that are based on events aggregated over five years. This method of obtaining greater rate stability may obscure major changes that have occurred over time.















## APPENDIX 2. DEFINITIONS OF TERMS, RATES AND RATIOS

### AGE

Age in years as of last birthday. For infants, age may be stated in days, weeks or months.

### BIRTH ORDER

The total number of births the mother has had, including live births and terminations of pregnancy, both spontaneous and induced.

### BIRTHWEIGHT

Weight of fetus or infant at time of delivery.

### FETAL DEATH

Death prior to the complete expulsion or extraction from its mother of a product of conception, having completed at least 20 weeks of gestation; the fetus shows no signs of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

### FIRST PARITY

The first live birth a mother has delivered.

### INFANT DEATH

Death occurring to an individual of less than 1 year of age. The term excludes fetal deaths.

### LIVE BIRTH

The complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.

## MATERNAL DEATH

Death for which the certifying physician has designated a complication of pregnancy, childbirth or the puerperium as the underlying cause of death.

## METROPOLITAN COUNTY

A county with at least one city of 50,000 inhabitants or with "twin cities" with a combined population of at least 50,000; part of a metropolitan statistical area (MSA). Metropolitan county and MSA status are defined and determined by the U. S. Office of Management and Budget.

## NEONATAL DEATH

Death occurring to an individual less than 28 days of age.

## OCCURRENCE RATE

Location of event happening. Some rates are calculated according to where the event occurred, regardless of residence, e.g. marriage and divorce rates.

## PERINATAL DEATH

A fetal death or a death occurring to an individual less than 7 days of age.

## PREMATURE BIRTH

A live birth or fetal death in which the weight is 2,500 grams (approximately 5 lb. 8 oz.) or less at time of delivery.

## RESIDENCE

Usual place of residence. For births and fetal deaths, usual place of residence of mother is used. Some rates are calculated according to place of residence, regardless of where event occurred.

## UNDERLYING CAUSE OF DEATH

Disease or condition that gave rise to the chain of morbid events leading to death, or the circumstances of the accident or violence that produced the fatal injury. See Appendix 3 for the causes and ICD numbers used in this report.

## Rates and Ratios

Definitions of selected rates and ratios are presented below. No attempt is made to present the method of calculating each vital rate or ratio contained in this report.

The principles applied in computing age-specific, race-specific or other category-specific vital rates may be inferred from the definitions given below for certain category-specific death rates.

(Crude) death rate =	$1,000 \text{ or } 100,000 \times \frac{\textit{number of deaths}}{\textit{population}}$
Cause-specific death rate =	$100,000 \times \frac{\textit{number of deaths from the cause}}{\textit{population}}$
Race-specific death rate =	$100,000 \times \frac{\textit{number of deaths for the race}}{\textit{population for that race}}$
Age-specific death rate =	$100,000 \times \frac{\textit{number of deaths for the age}}{\textit{population for that age}}$
Maternal mortality rate =	$10,000 \text{ or } 100,000 \times \frac{\textit{number of maternal deaths}}{\textit{number of live births}}$
Perinatal mortality rate (sometimes designated as a ratio) =	$1,000 \times \frac{\textit{number of deaths under 7 days of age} + \textit{fetal deaths}}{\textit{number of live births} + \textit{fetal deaths}}$
Fetal death rate =	$1,000 \times \frac{\textit{number of fetal deaths}}{\textit{number of live births} + \textit{fetal deaths}}$
Fetal death ratio =	$1,000 \times \frac{\textit{number of fetal deaths}}{\textit{number of live births}}$
Infant mortality rate =	$1,000 \times \frac{\textit{number of deaths under 1 year of age}}{\textit{number of live births}}$
Neonatal mortality rate =	$1,000 \times \frac{\textit{number of deaths under 28 days of age}}{\textit{number of live births}}$
Postneonatal mortality rate =	$1,000 \times \frac{\textit{number of deaths from ages} \\ \textit{28 days through 11 months}}{\textit{number of live births}}$

$$\text{Years of potential life lost (YPLL)} = \Sigma \left( \begin{array}{l} 65 - \text{decedent's age in years for those} \\ \text{who died before reaching their 65th birthday} \end{array} \right)$$

$$\text{(Crude) live birth rate} = 1,000 \times \frac{\text{number of births}}{\text{population}}$$

$$\text{(General) fertility rate} = 1,000 \times \frac{\text{number of live births to women of all ages}}{\text{number of women 15 to 44 years of age}}$$

$$\text{Age-specific birth rate} = 100,000 \times \frac{\text{number of births to women of specified age}}{\text{number of women of that age}}$$

$$\text{Teenage live birth ratio} = 1,000 \times \frac{\text{number of live births to women under 20 years of age}}{\text{number of live births to women of all ages}}$$

$$\text{Ratio of out-of-wedlock childbearing} = 1,000 \times \frac{\text{number of live births to unmarried women}}{\text{number of live births}}$$

$$\text{(Crude) marriage rate} = 1,000 \times \frac{\text{number of marriages}}{\text{population}}$$

$$\text{(Crude) divorce rate} = 1,000 \times \frac{\text{number of divorces and annulments}}{\text{population}}$$

### APPENDIX 3. CAUSE-OF-DEATH CLASSIFICATION

Cause-of-death data presented in this publication were classified according to the International Classification of Diseases (ICD) and coded by procedures outlined in World Health Organization regulations.

Revisions in the ICD are made about every 10 years to reflect progress in medical knowledge and changes in the experience of morbid conditions. The eighth revision of the ICD was used in Illinois from 1969 through 1978. Use of the ninth revision began in 1979. The introduction of a new revision often entails major changes in classifications that cause breaks in the continuity of mortality statistics.

When more than one cause of death is cited on the certificate, the cause designated by the certifying physician as "underlying" is, generally, the cause tabulated. When the underlying cause is unclear, the physician is queried for clarification.

ICD ninth revision category numbers for selected causes of death are given below.

#### CATEGORY NUMBERS FOR SELECTED CAUSES OF DEATH ACCORDING TO NINTH REVISION INTERNATIONAL CLASSIFICATION OF DISEASES ADAPTED FOR USE IN THE UNITED STATES (1975)

I.	Infective and parasitic diseases . . . . .	001-139
	Intestinal infectious diseases . . . . .	001-009
	Shigellosis . . . . .	004
	Gastroenteritis and colitis . . . . .	009.0-009.1
	Diarrheal diseases . . . . .	009.2-009.3
	Tuberculosis . . . . .	010-018
	Late effects of tuberculosis . . . . .	137
	Zoonotic bacterial diseases . . . . .	020-027
	Other bacterial diseases . . . . .	030-041
	Diphtheria . . . . .	032
	Whooping cough . . . . .	033
	Streptococcal sore throat and scarlet fever . . . . .	034
	Meningococcal infection . . . . .	036
	Tetanus . . . . .	037
	Septicemia . . . . .	038
	Gas gangrene . . . . .	040.0
	Human immunodeficiency virus infection . . . . .	042-044
	Acute poliomyelitis . . . . .	045
	Late effects of poliomyelitis . . . . .	138
	Slow virus infection of central nervous system . . . . .	046



	Chicken pox	052
	Herpes zoster	053
	Herpes simplex	054
	Measles (rubeola)	055
	Rubella	056
	Viral hepatitis	070
	Rabies	071
	Mumps	072
	Infectious mononucleosis	075
	Typhus	080-081
	Rocky mountain spotted fever	082.0
	Malaria	084
	Syphilis	090-097
	Gonococcal infections	098
	Other venereal diseases	099
	Mycoses (fungus infections)	110-118
	Sarcoidosis	135
	Pneumocystosis	136.3
II.	Malignant neoplasms	140-208
	Lip, oral cavity and pharynx	140-149
	Digestive organs and peritoneum	150-159
	Respiratory system	160-165
	Trachea, bronchus and lung	162
	Breast	174-175
	Genital organs	179-187
	Urinary organs	188-189
	Other and unspecified sites	170-173, 190-199
	Leukemia	204-208
	Other lymphatic and hematopoietic	200-203
III.	Endocrine, nutritional and metabolic diseases	240-279
	Diabetes mellitus	250
	Cystic fibrosis	277.0
IV.	Diseases of blood and blood forming organs	280-289
	Anemia	280-285
V.	Mental disorders	290-319
	Drug dependence	304
VI.	Diseases of nervous system and sense organs	320-389
	Meningitis	320-322

	Alzheimer's disease	331.0
	Infantile cerebral palsy	343
	Epilepsy	345
	Muscular dystrophy	359
VII.	Diseases of the circulatory system	390-459
	Heart disease	393-398, 402, 404-429
	Chronic rheumatic	393-398
	Hypertensive heart disease	402
	Hypertensive heart and renal disease	404
	Ischemic heart disease	410-414
	Acute myocardial infarction	410
	Other acute and subacute forms	411
	Angina pectoris	413
	Chronic ischemic heart disease	412, 414
	Other diseases of endocardium	424
	All other forms	415-423, 425-429
	Hypertension without mention of heart	401, 403
	Cerebrovascular disease	430-438
	Subarachnoid hemorrhage	430
	Cerebral hemorrhage	431-432
	Cerebral thrombosis	434.0, 434.9
	Cerebral embolism	434.1
	All other	433, 435-438
	General arteriosclerosis	440
	Other circulatory diseases	390-392, 441-459
	Aortic aneurysm	441
VIII.	Diseases of the respiratory system	460-519
	Acute upper respiratory infections	460-465
	Acute bronchitis and bronchiolitis	466
	Pneumonia	480-486
	Influenza	487
	Chronic obstructive pulmonary diseases and allied conditions	490-496
	Bronchitis, chronic and unspecified	490-491
	Emphysema	492
	Asthma	493
	Bronchiectasis and extrinsic allergic alveolitis	494-495
	Chronic obstructive lung disease, not elsewhere classified	496
IX.	Diseases of the digestive system	520-579

	Ulcer of stomach and duodenum . . . . .	531-533
	Hernia and intestinal obstruction . . . . .	550-553, 560
	Gastritis, duodenitis, enteritis, colitis . . . . .	535, 555-558
	Cirrhosis of liver . . . . .	571
X.	Diseases of the genitourinary system . . . . .	580-629
	Nephritis, nephrotic syndrome and nephrosis . . . . .	580-589
	Infections of kidney . . . . .	590
	Hyperplasia of prostate . . . . .	600
XI.	Complications of pregnancy, childbirth and the puerperium . . . . .	630-676
XII.	Congenital anomalies . . . . .	740-759
	Nervous system . . . . .	740-742
	Heart . . . . .	745-746
XIII.	Certain conditions originating in the perinatal period . . . . .	760-779
	Maternal unrelated to pregnancy . . . . .	760
	Maternal infections . . . . .	760.2
	Maternal complications of pregnancy . . . . .	761
	Premature rupture of membranes . . . . .	761.1
	Multiple pregnancy . . . . .	761.5
	Maternal death . . . . .	761.6
	Complications of placenta, cord and membranes . . . . .	762
	Placenta conditions . . . . .	762.0-762.3
	Prolapsed cord . . . . .	762.4
	Other cord conditions . . . . .	762.5-762.6
	Other complications of labor and delivery . . . . .	763
	Birth trauma . . . . .	767
	Intrauterine hypoxia and birth asphyxia . . . . .	768
	Respiratory distress syndrome . . . . .	769
	Other respiratory conditions of fetus and newborn . . . . .	770
	Fetal and neonatal hemorrhage . . . . .	772
	RH incompatibility . . . . .	773.0
	Other haemolytic diseases . . . . .	773.1-773.5
XIV.	Symptoms, signs and ill-defined conditions . . . . .	780-799
	Senility without mention of psychosis . . . . .	797
	Sudden death, cause unknown . . . . .	798
	Sudden infant death syndrome . . . . .	798.0
XV.	Unintentional Injuries . . . . .	E800-E949
	Motor vehicle . . . . .	E810-E825

Collision	E810-E815
Pedestrian	E814
Other motor vehicle	E811-E812
Railroad train	E810
Bicycle	E813.6
Fixed object	E815
Other collision	E813 exc. E813.6
Non-collision	E816-E825
Running off road	E816
Other traffic	E817-E819
Non-traffic	E820-E825
Non-motor vehicle transport	E800-807, E826-E848
Other vehicle	E826-829, E846-E848
Water transport	E830-E838
Aircraft	E840-E845
Railway	E800-E807
Non-transport accidents	E850-E949
Poisonings	E850-E869
Drugs and medicaments	E850-E858
Falls	E880-E888
Fire and explosion	E890-E899
Firearms	E922
Mechanical suffocation	E911-E913
Drownings	E910
Other and late effects	remainder of E800-E869, E880-E929
Therapeutic and non-therapeutic complications	E870-E879, E930-E949

XVI. Suicide	E950-E959
Drugs and medicaments	E950.0-E950.5
Solid and liquid substances	E950.6-E950.9
Gases and vapor	E951-E952
Hanging, strangulation and suffocation	E953
Handgun	E955.0
All other and unspecified firearms	E955.1-E955.4
All other and late effects of self inflicted injury	E954, E955.5-E959

XVII. Homicide	E960-E978
Assault by handgun	E965.0
Assault by other and unspecified firearms	E965.1-E965.4
Assault by cutting and piercing instrument	E966
Assault by all other means and late effects of injury	

purposely inflicted by other persons .....	E960-E964, E965.5-E965.9, E967-E969
Legal intervention .....	E970-E978

XVIII. Injury undetermined whether accidentally or purposely inflicted .....	E980-E989
Drugs and medicaments .....	E980.0-E980.5

## APPENDIX 4. LIFE TABLE CONSTRUCTION

Life tables are a type of survival analysis where age-specific death rates are applied to a hypothetical cohort to derive life expectancy and other survivorship measures. The abridged period life table, the most commonly used type, appears in this publication (pages I.32-I.34). Abridged refers to the fact that the life table contains data for age groups instead of single-year ages. Period means the current or a particular period's age-specific death rates are applied to the life table's hypothetical cohort, instead of tracking a real cohort throughout their lives, to see what levels of mortality the cohort actually experienced. The life tables in this publication were constructed using the method found in Robert Schoen's article, "Calculating Life Tables by Estimating Chiang's  $\alpha$  from Observed Rates" (*Demography* 15(4): 625-635, November 1978).

Three years of mortality data (1989-91) were averaged to minimize the effects of influenza epidemics and other periodic or one-time mortality influences. The population data, combined with the mortality data to calculate age-specific death rates, were the 1990 Modified Age/Race/Sex (MARS) counts from the U.S. Bureau of the Census. The MARS data represent improvements, especially for race and age, over the original 1990 census data. Both the mortality and population data inputs were left unsmoothed, meaning no improvements were made to mitigate or correct for irregularities or inconsistencies.

The following is a brief explanation of the columns shown in the life tables. For a more complete explanation of life table functions, see *The Methods and Materials of Demography*, by Henry Shryock and Jacob Siegel, 1980 (4th ed.), U.S. Department of Commerce, Bureau of the Census.

- $x$  The age in years at the start of the interval. The interval implied is the age at the start through to, but not including, the next stated age.
- ${}_nq_x$  The probability of dying during the age interval.
- $l_x$  Of a hypothetical birth cohort of 100,000 (or some other arbitrary starting number called a radix), the number alive at the start of the age interval.
- ${}_nd_x$  Of a hypothetical birth cohort of 100,000 experiencing the  ${}_nq_x$  values at each interval, the number dying during the age interval.
- ${}_nL_x$  Of a population experiencing constant rates of mortality, number of births, age structure, and size (stationary population), the number of person-years lived during the age interval.
- $T_x$  Of the stationary population, the total number of person-years lived in the age interval and all subsequent age intervals.
- $e_x$  The expectation of life remaining at the start of the age interval.







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